

September 12, 2023

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City Administrator
City of Westwood, KS

Re: Traffic Impact Study for 50th and Rainbow Development

BHC has been asked to review the traffic impact of a proposed redevelopment located in the southwest corner of 50th Street and Rainbow Boulevard. The site includes Joe D. Dennis Park and the former Westwood View Elementary School.

Westwood View Elementary School operations have relocated to the northeast corner of 50th Street and Belinder Avenue, approximately 500 feet west of this site. For the 2023-2024 school year, Rushton Elementary School operations will utilize the original Westwood View Elementary School while their school is being rebuilt. After the school year, the proposed development would replace the site for a proposed mixed-use site consisting of 85,193 square feet of general office buildings and 29,963 square feet of retail.

This traffic study provides existing traffic counts, a traffic distribution, trip generation and intersection capacity/queuing analyses for the proposed development for the AM, PM school peak, and PM peak hour traffic volumes. The traffic data was collected on Wednesday, September 6th while both Westwood View Elementary and Rushton Elementary were in session.

Sight and intersection analyses, crash analysis, and left-turn lane warrant analyses have also been completed for Rainbow Boulevard. This traffic study also provides a future 20-year condition scenario for year 2043 where a 0.5% annual traffic growth rate is applied to Rainbow Boulevard.

TABLE OF STUDY CONTENTS

<u>Section</u>	<u>Pages</u>
Existing Conditions	2-4
Proposed Conditions	5
Trip Distribution	6-7
Trip Generation	8-10
Existing + Proposed Conditions	11
Intersection Capacity	12-14
Queuing Analysis	15
Intersection Stopping and Sight Distance Analysis	16
Crash Analysis	17
Access Management	18-19
KDOT Left-Turn Lane Warrants	20
Traffic Signal Warrant (Peak Hour)	21
Future Year 2043 Conditions	22-23
Findings and Recommendations	24-25
List of Appendices	26

EXISTING CONDITIONS

The location currently includes Joe D. Dennis Park and the former Westwood View Elementary School. Rainbow Boulevard (169 Highway) is a 35mph 4-lane road that runs along the eastern side of the site. Rainbow Boulevard provides access to Shawnee Mission Parkway approximately 1000 feet to the south, and I-35 approximately 2.5 miles to the north.

The intersection of Rainbow Boulevard and 50th Street is a signalized 4-leg intersection with 50th Street being offset by approximately 70 feet. 50th Street runs along the northern side of the site and is a 25-mph 2-lane minor collector street connecting Mission Road to State Line Road.

51st Street is a 25-mph 2-lane residential street along the southern side of the site that connects Rainbow Boulevard to 51st Terrace. 51st Street forms a T-intersection with Rainbow Boulevard that is Stop-sign controlled for 51st Street.

The existing street network along with AM and PM traffic counts were taken on Tuesday, July 18th may be seen in Figure 1.

EXISTING CONDITIONS (continued)

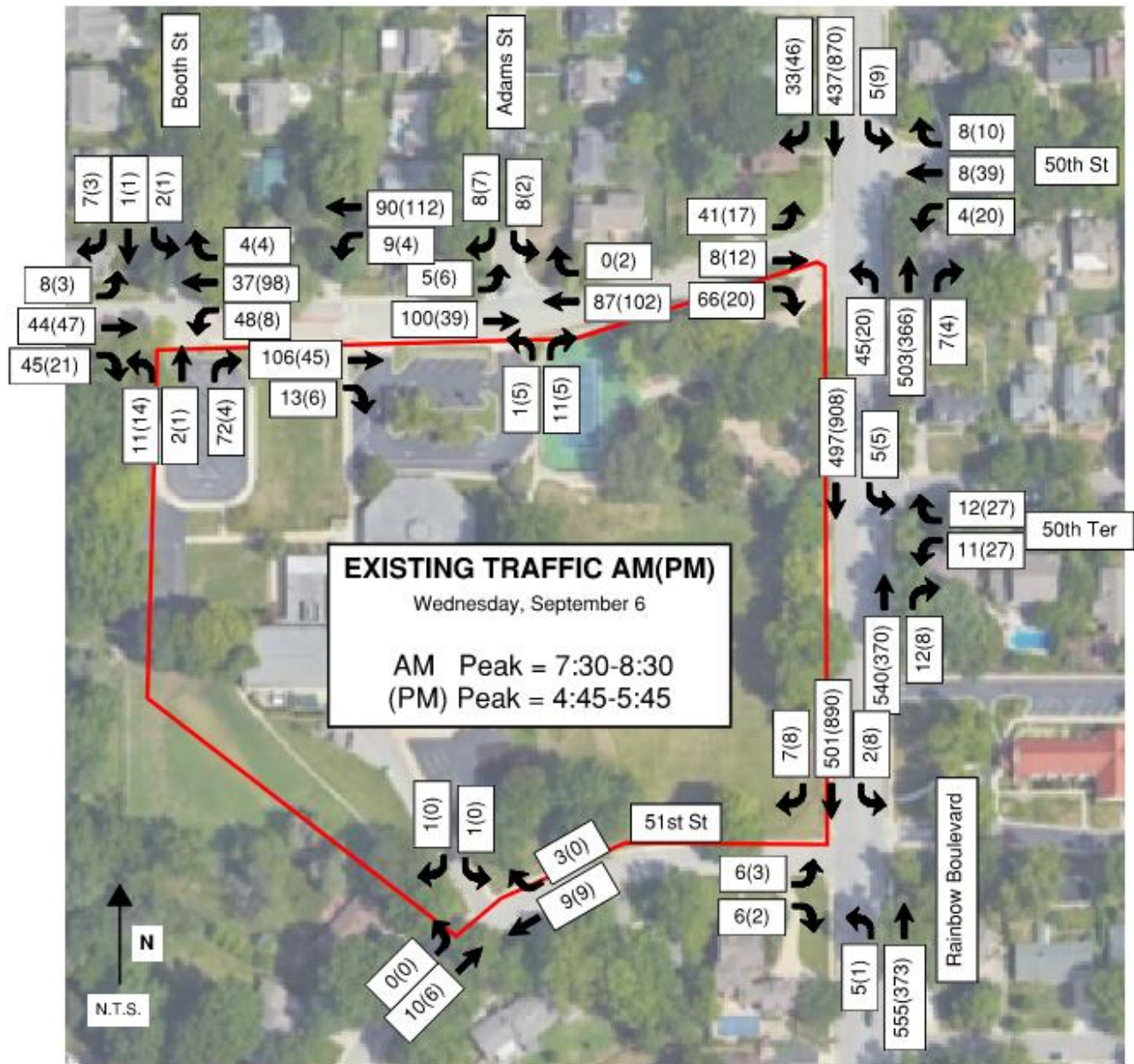


Figure 1: Existing Conditions

The intersections included in Figure 1 include:

- 50th Street and Booth Street
- 50th Street and west school drive
- 50th Street and Adams Street
- 50th Street and Rainbow Boulevard
- 50th Terrace and Rainbow Boulevard
- 51st Street and Rainbow Boulevard
- 51st Street and west school drive

EXISTING CONDITIONS (continued)

Concerns about school traffic have been heard which resulted in further analysis of the school peak times. School begins at 8:10 AM, which coincides with the regions 7:30-8:30 AM traffic peak. In the afternoon school dismisses at 3:10 PM, which correlates to a 2:45-3:45 PM school peak that is different than the regions 4:45-5:45 PM traffic peak.

The traffic count results from the 2:45-3:45 PM school peak traffic may be seen in Figure 2.

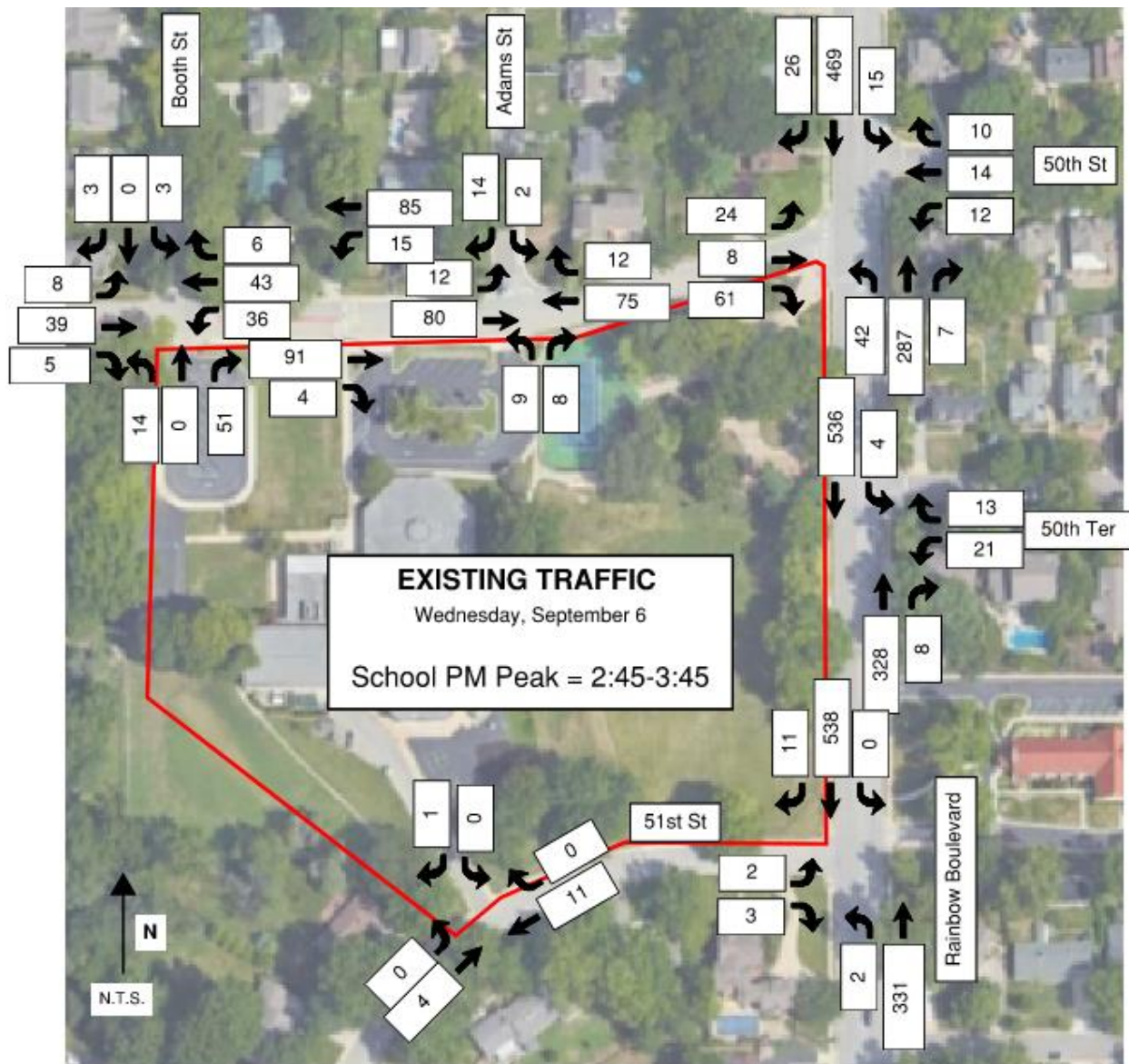


Figure 2: School PM Peak 2:45-3:45

PROPOSED CONDITIONS

The proposed mixed-use site will consist of 85,193 square feet of general office building and 29,963 square feet of retail. These are gross floor areas, not leasable space.

Along the eastern side of the site (Rainbow Boulevard), a new access driveway is proposed that would align itself across from 50th Terrace. The access driveway will provide access to the ground level of a parking garage with 215 parking spaces.

Along the northern side of the site (50th Street), a single proposed driveway that aligns with Adams Street would provide access to the second level of the parking garage with 80 parking spaces.

Along the southern side of the site (51st Street), the eastern of two proposed driveways approximately 150 feet west of Rainbow Boulevard will provide a second access point to the ground level of the parking garage. The western proposed driveway will provide a second access point the second level of the parking garage. There is no internal connectivity between the two levels of the parking garage.

The proposed site layout may be seen in Figure 3. Intersection site triangles have been provided on the plans and may also be seen in Figure 3.

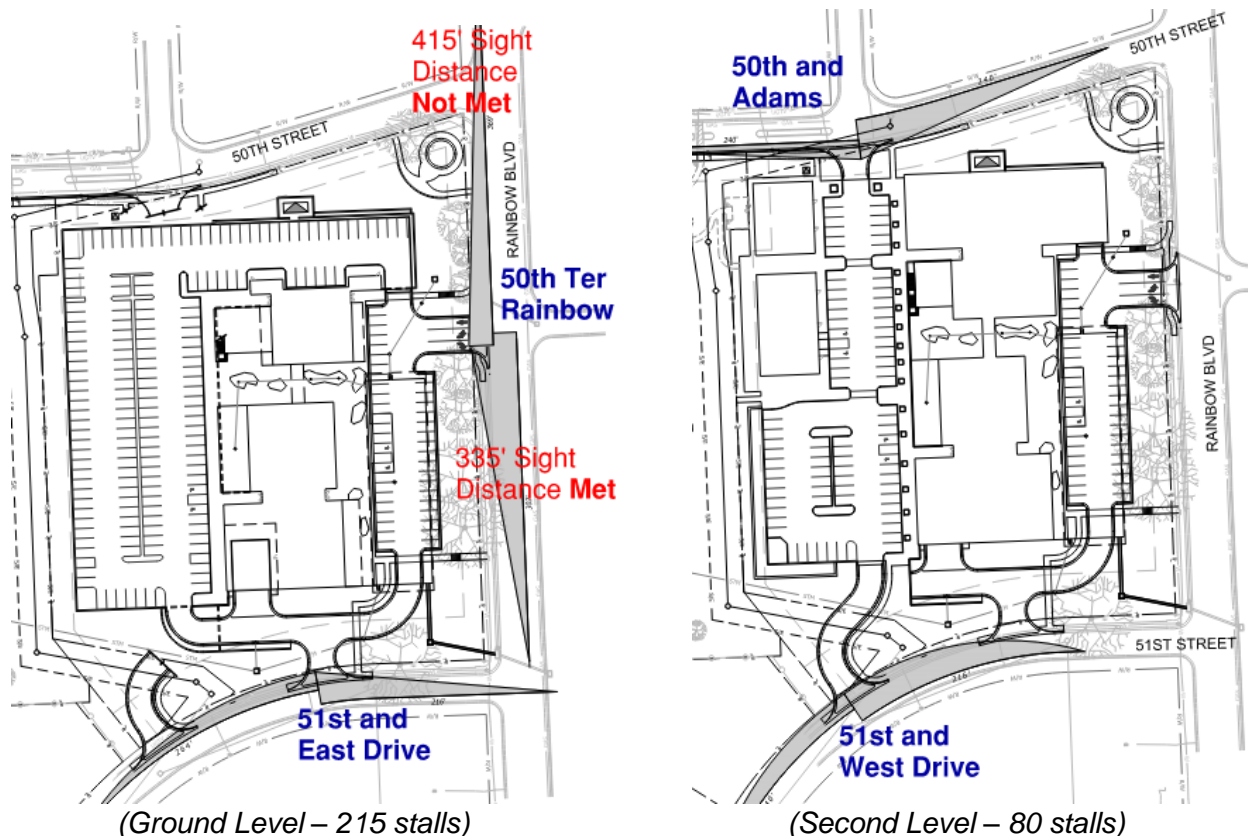


Figure 3: Proposed Site Layout

TRIP DISTRIBUTION

The project is situated within a well-established neighborhood. Rainbow Boulevard is anticipated to carry a larger percentage of the proposed site-related traffic due to the nature of a mixed-use site as opposed to a centrally located community elementary school. It is also assumed that a notable percentage of the retail traffic is expected to be pass-by and/or internal capture trips already on the surrounding roadway network.

The fact that Rushton Elementary will (and has) operated in the former Westwood View Elementary school for the 2023-2024 complicates existing traffic counts, traffic patterns, and the future trip distribution. Traffic distributions for a neighborhood school and a mixed-use development are expected to operate differently. Figure 4 illustrates where each school is relative to the project and where its traffic would be expected to originate.

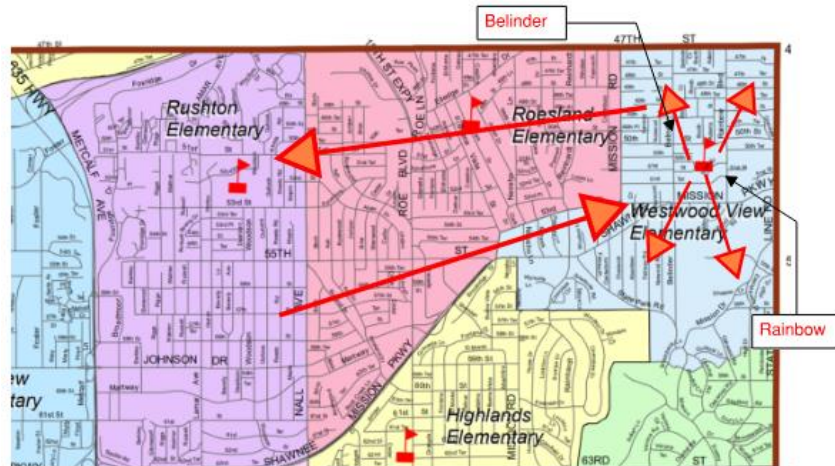


Figure 4: Rushton Elementary Traffic Flow

Figure 5 illustrates where it is anticipated the proposed site office and retail traffic will originate. General office employees would be expected to draw from a much larger population radius within the metropolitan area and less likely to use the residential street networks in their commute. The trip distribution assumptions utilized for distributing the proposed traffic are explained on the following page.

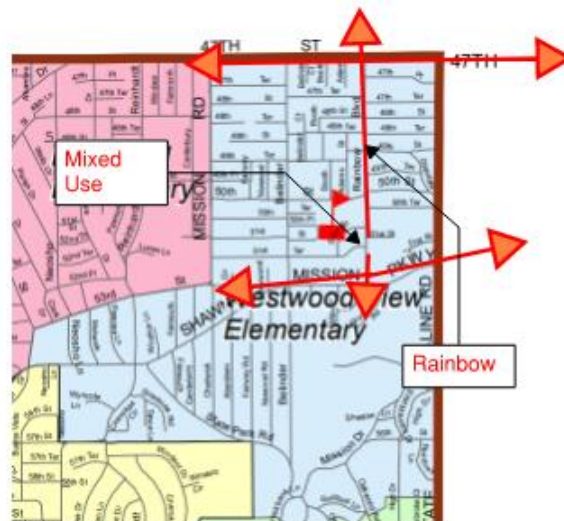


Figure 5: Proposed Mixed-Use Traffic Flow

TRIP DISTRIBUTION (continued)

A review of the surrounding population centers, existing roadway network, and September traffic counts along Rainbow Boulevard was completed to develop the trip distribution. Several assumptions were made for the distribution and are summarized below:

- 1) 15% of site generated traffic will be assigned to filter through the surrounding neighborhoods via 50th Street and 51st Street.
- 2) 85% of the site generated traffic will be assigned to Rainbow Boulevard with close to a 50%/50% northbound/southbound directional split.

Figure 6 illustrates the entering (blue numbers) and exiting (red numbers) trip distribution percentage selected based on these assumptions. The numbers in orange represent the directional distributions from each entering street/direction. The sum of the red numbers leaving the site boundary, as well as the sum of the blue numbers entering the site boundary total 100% and represent where the trip generation numbers will be assigned.

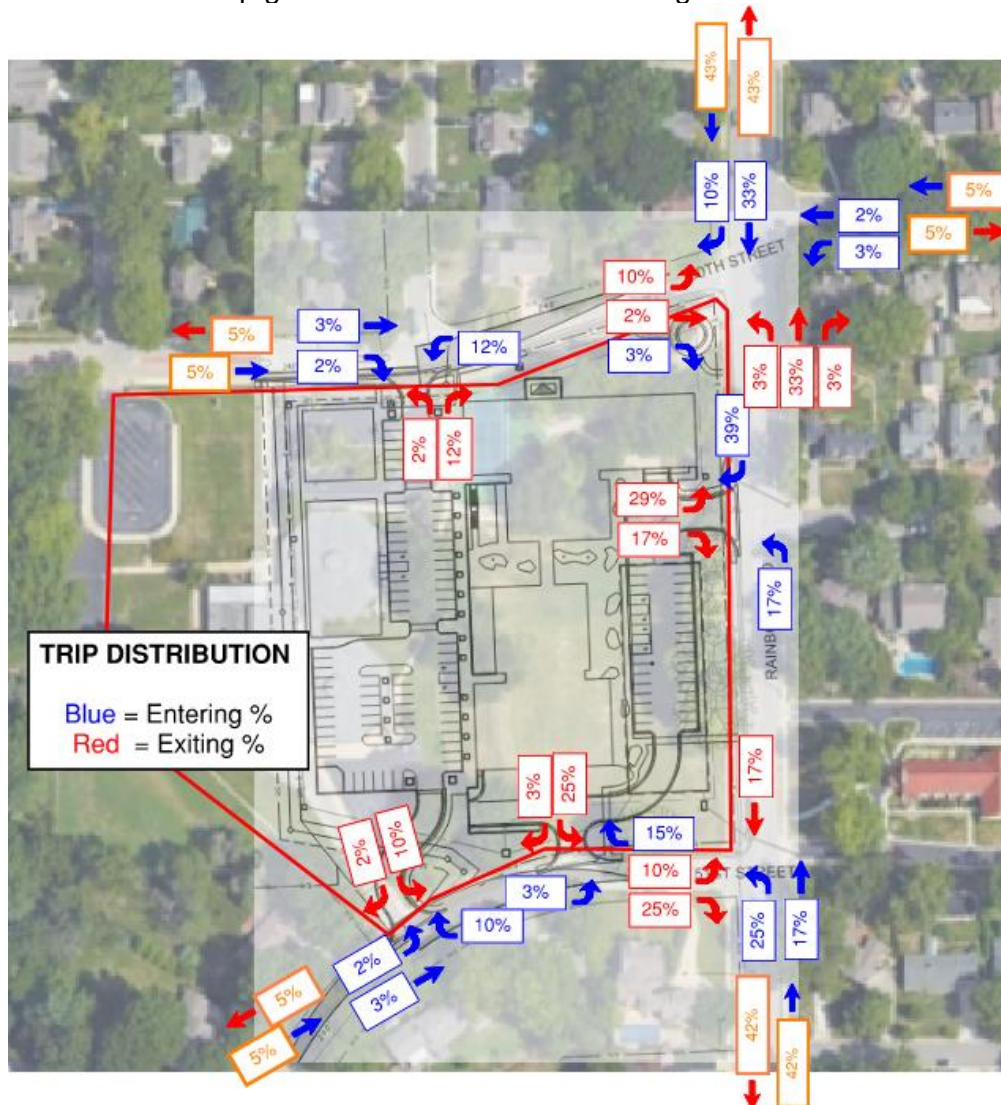


Figure 6: Proposed Trip Distribution

TRIP GENERATION

A trip generation analysis was performed using the Institute of Transportation Engineers (ITE) TripGen web-based app. The 11th edition of the Trip Generation Manual was used. The land use codes used for the proposed site were 710 – General Office Building, and 822 – Strip Retail Plaza.

The ITE Average Rate was used for General Office Building, and the ITE Fitted Curve Equation was used for the Strip Retail Plaza. The fitted curve equation was chosen as a better fit for the ITE data points collected for a Strip Retail Plaza site (the proposed retail is 29,963 square feet which is close to the 40,000 square foot threshold). See ITE Trip Gen plots in Appendix for justification between average and fitted curve rates. The number of trips generated may be seen in Table 1 for the AM peak hour, PM peak hour, and weekday total.

Table 1 – Trip Generation						
ITE Code	Land Use	1000 SF	Avg. Rate	Trips Generated		
				Total	Enter	Exit
AM Peak Hour (7-9 AM)						
710	General Office Building	85.19	1.52	129	114	15
822	Strip Retail Plaza (<40k)	29.96	2.36*	59	36	23
Total AM Peak Hour				188	150	38
PM Peak Hour (4-6 PM)						
710	General Office Building	85.19	1.44	123	21	102
822	Strip Retail Plaza (<40k)	29.96	6.59*	170	85	85
Total PM Peak Hour				293	106	187
Weekday Total						
710	General Office Building	85.19	10.84	923	462	461
822	Strip Retail Plaza (<40k)	29.96	54.45*	1494	747	747
Total Weekday				2417	1209	1208

* ITE Average Rate shown, ITE Fitted Curve Equation used for Strip Retail Plaza <40k

Pass-By Assumption

Not all traffic entering or exiting a site driveway is necessarily new traffic added to the roadway network. The actual amount of new traffic is dependent upon the purpose of the trip and route used from its origin to its destination. For example, retail-oriented developments such as shopping centers, restaurants, service stations, and convenience markets are often located adjacent to busy roads with the intent of attracting motorists already on the roadway network. These developments attract a portion of their trips from existing traffic passing the site. Thus, these “pass-by” trips do not add new traffic and may be reduced from the total external trips generated by a study site.

Considering the proposed Strip Retail Plaza land use, an average pass-by percentage reduction of 30% is an acceptable practice. ITE indicates that the average pass-by rate for a Shopping Plaza is 40%. This study will stay conservative by not using any pass-by percentage which overestimates the mixed-use traffic generation lowering intersection levels of service. If a pass-by of 30% were applied to the retail plaza this study would decrease those trips by 30%.

TRIP GENERATION (continued)

Figure 7 illustrates the Trip Generations provided in Table 1 and distributes them to the proposed site and surrounding street network to the percentages provided in Figure 5.

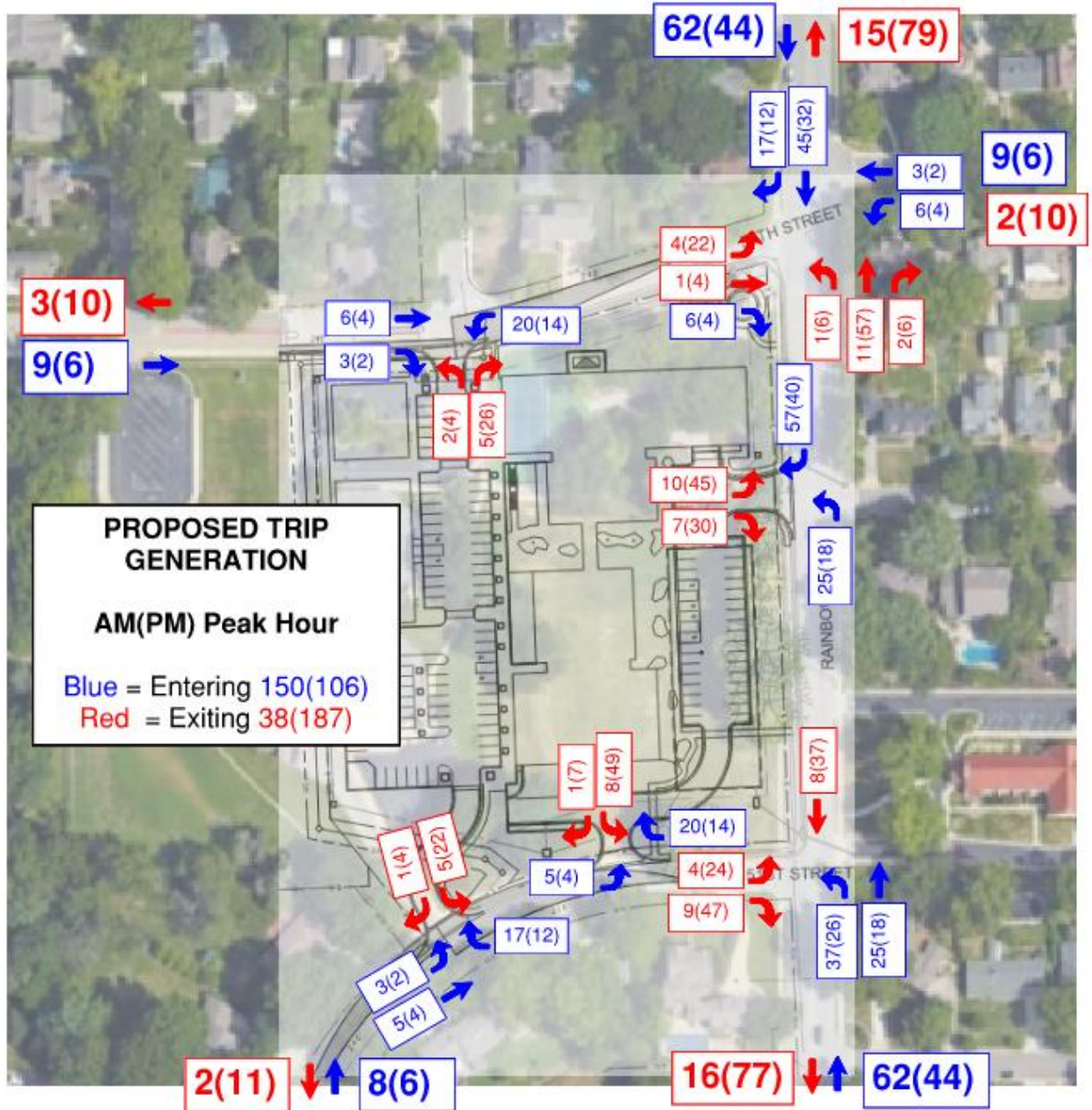


Figure 7: Proposed Trip Generation

TRIP GENERATION (continued)

Figure 7 represents the peak hour traffic increases associated with the site and the trip distribution assumptions. The information in Figure 7 helps identify intersections where projected left-turn movement increases could impact intersection operations.

The highest left-turn volume increases in Figure 7 are the southbound left-turn from the proposed driveway to 51st Street (49 vehicles) and the westbound left-turn from the proposed site driveway onto Rainbow Boulevard (45 vehicles). Both movements occur in the PM peak.

The highest left-turn increase on Rainbow Boulevard is projected to occur on northbound Rainbow at 51st Street with 37 additional vehicles in the AM peak.

EXISTING + PROPOSED CONDITIONS

The existing traffic volumes in Figure 1 from September have been added to the proposed site traffic volumes in Figure 7 to determine the existing+proposed volumes in Figure 8. These volumes will be used in the intersection capacity analyses for existing+proposed conditions.

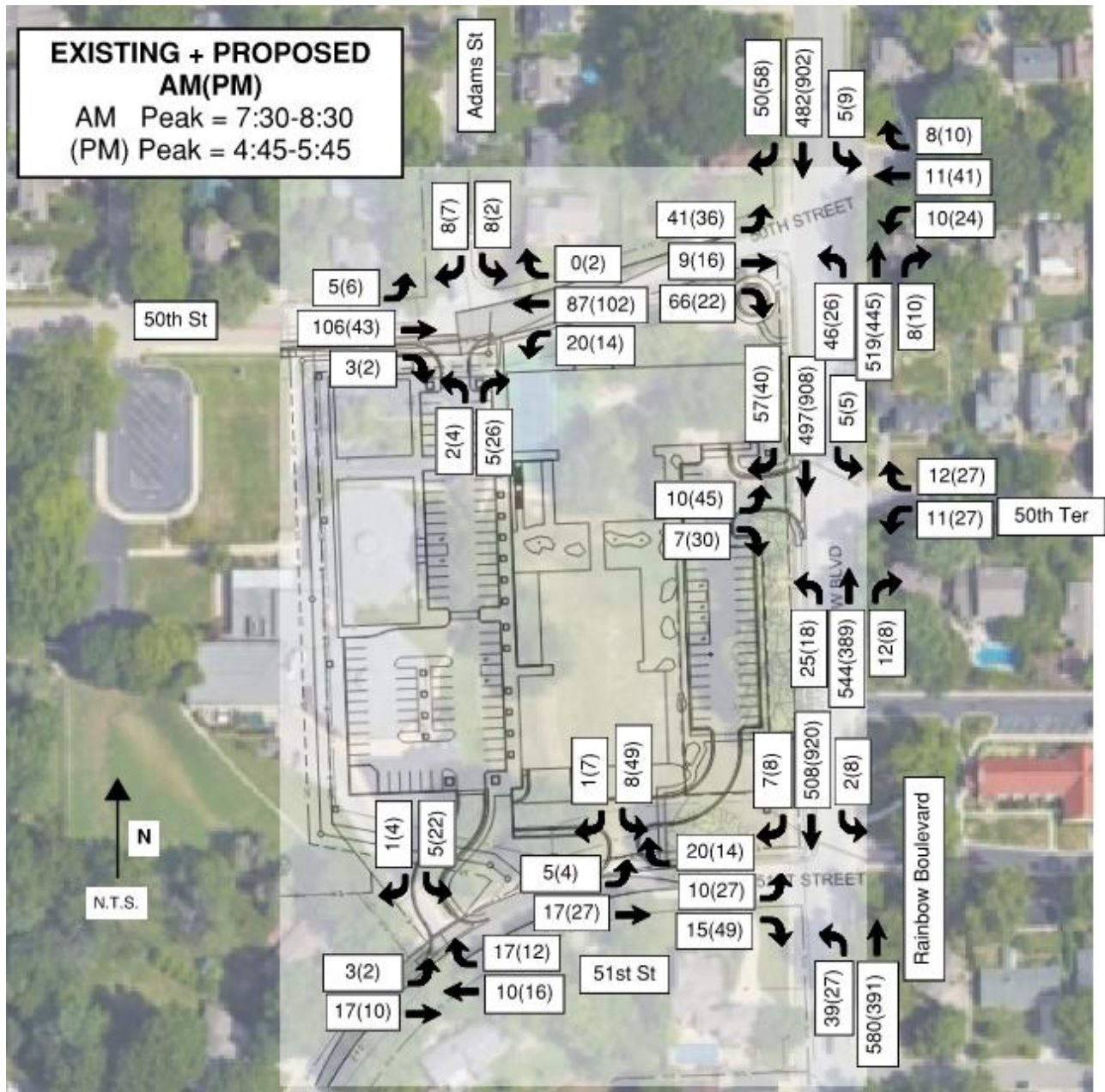


Figure 8: Existing + Proposed Traffic

INTERSECTION CAPACITY ANALYSES

Intersection capacity analyses were performed using the Highway Capacity Manual (HCM) 6th Edition Methodology provided in Synchro v11. The amount of delay is equated to a Level of Service (LOS) based on defined thresholds. A grade of A through F is assigned, with LOS A representing the best intersection operation. Table 2 shows the LOS associated with intersection approach delays, in seconds per vehicle (sec/veh), for signalized and unsignalized intersection cases.

Table 2 – Level of Service Criteria		
Level of Service (LOS)	Stop Control Approach Delay (sec/veh)	Signal Control Approach Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Existing traffic signal timings for 50th Street and Rainbow Boulevard was provided by the City of Westwood. The timings were entered into the Synchro v11 program along with the existing AM and PM peak hour traffic volumes from Figure 1. Analyses were also performed for the existing + proposed peak hour volumes in Figure 8. The results of the analyses for the project intersections may be viewed in Table 3 on the next page.

INTERSECTION CAPACITY ANALYSES (continued)

Table 3 – Intersection Capacity Analyses										
Intersection		Existing Conditions				Existing + Proposed Conditions				
		AM		PM		AM		PM		
		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	LOS
50th and Adams Street (Two-Way Stop)										
	NB	9.0	A	9.1	A	9.3	A	8.8	A	
	SB	9.5	A	9.0	A	9.7	A	9.2	A	
	EB	0.4	A	1.0	A	0.3	A	0.9	A	
	WB	0.0	A	0.0	A	1.4	A	0.9	A	
50th and Rainbow Boulevard (Signalized Intersection)										
	NB	11.1	B	9.3	A	11.6	B	10.7	B	
	SB	10.5	B	13.1	B	11.2	B	14.9	B	
	EB	33.5	C	46.8	D	33.7	C	38.7	D	
	WB	47.0	D	38.2	D	45.2	D	37.7	D	
50th Terrace and Rainbow Boulevard (Two-Way Stop)										
	NB	0.0	A	0.0	A	0.6	A	0.6	A	
	SB	0.1	A	0.0	A	0.1	A	0.0	A	
	EB	-	-	-	-	17.8	C	39.2	E	
	WB	15.5	C	17.2	C	16.8	C	19.8	C	
51st and Rainbow Boulevard (Eastbound One-Way Stop)										
	NB	0.1	A	0.0	A	0.7	A	1.0	A	
	SB	0.0	A	0.2	A	0.0	A	0.2	A	
	EB	15.2	C	23.7	C	16.0	C	29.7	D	
51st Street and East Drive (Southbound One-Way Stop)										
	SB	-	-	-	-	8.8	A	9.0	A	
	EB	-	-	-	-	1.7	A	0.9	A	
	WB	-	-	-	-	0.0	A	0.0	A	
51st Street and West Drive (Southbound One-Way Stop)										
	SB	8.5	A	0.0	A	8.7	A	8.8	A	
	EB	0.0	A	0.0	A	1.1	A	1.2	A	
	WB	0.0	A	0.0	A	0.0	A	0.0	A	

For existing conditions, all intersections and lane movements operate at LOS of D or better. For the existing+proposed conditions, all intersections and lane movements continue to operate at LOS of D or better with one exception. The eastbound lane movement from the ground level parking garage to Rainbow Boulevard at 50th Terrace is estimated to operate at LOS E during the PM peak hour. Vehicle delays and queues associated with this movement would occur internal to the site.

Note: A pass-by reduction was not applied to the mixed-use component of the trip generation used for these analyses. If applied, average delays would improve.

INTERSECTION CAPACITY ANALYSES (continued)

PM School Peak Hour -vs- PM Peak Hour

The afternoon schools dismiss at 3:10 PM, which correlates to a 2:45-3:45 PM school peak that is different than the regional 4:45-5:45 PM traffic peak.

A comparison of the 2:45-3:45 PM school peak to the 4:45-5:45 PM peak hour may be seen in Table 4.

Table 4 – PM School Peak -vs- PM Peak Hour					
		Existing Conditions			
		PM School (2:45-3:45)		PM Peak (4:45-5:45)	
Intersection		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS
50th and Adams Street (Two-Way Stop)					
	NB	9.4	A	9.1	A
	SB	8.9	A	9.0	A
	EB	1.0	A	1.0	A
	WB	0.0	A	0.0	A
50th and Rainbow Boulevard (Signalized Intersection)					
	NB	9.6	A	9.3	A
	SB	10.5	B	13.1	B
	EB	35.8	D	46.8	D
	WB	44.4	D	38.2	D
50th Terrace and Rainbow Boulevard (Two-Way Stop)					
	NB	0.0	A	0.0	A
	SB	0.1	A	0.0	A
	EB		-	-	-
	WB	13.8	B	17.2	C
51st and Rainbow Boulevard (Eastbound One-Way Stop)					
	NB	0.1	A	0.0	A
	SB	0.0	A	0.2	A
	EB	13.2	C	23.7	C

Table 4 indicates that the study intersections operate at lower levels of service during the PM peak than the afternoon school peak.

Review of the traffic count video at 50th and Adams reveals that traffic is minimal and moves smoothly along 50th Street until 3:08 PM. At 3:10 PM, westbound traffic stops along 50th Street, and progresses slowly through 3:18 PM. Traffic normalizes around 3:20 PM and the Rushton school buses leave at 3:25 PM. Traffic is minimal and moving smoothly by 3:26 PM.

The observed school traffic congestion (less than 20-minutes) is typical of elementary schools. The proposed site traffic associated with the upper parking garage will distribute less trips during that peak congestion than Rushton School does presently.

QUEING ANALYSES

Synchro signalized intersection queuing analyses were performed using Highway Capacity Manual 6th Edition methodology in Synchro v11. The results of the analyses may be seen for the study intersections in Table 5.

Table 5 – Intersection 95% Queues						
Intersection	Storage Provided	Existing Conditions		Existing + Proposed Conditions		
		95% Queue (feet)		95% Queue (feet)		
		AM	PM	AM	PM	
50th Street and Adams Street						
Approach Lane						
NB	30'	0'	0'	0'	20'	
SB	20'	20'	0'	20'	0'	
50th Street and Rainbow Boulevard						
Approach Lane						
NB	300'	162'	106'	172'	142'	
SB	450'	133'	284'	154'	323'	
EB	250'	103'	55'	105'	75'	
WB	150'	31'	70'	40'	76'	
50th Terrace and Rainbow Boulevard						
Approach Lane						
EB	55'	0'	0'	20'	40'	
WB	200'	20'	20'	20'	20'	
NBL	280'	N/A	N/A	20'	20'	
51st Street and Rainbow Boulevard						
Approach Lane						
EB	140'	20'	20'	20'	40'	
NBL	130'	N/A	N/A	20'	20'	
51st Street and East Drive						
Approach Lane						
SB	40'	N/A	N/A	0'	20'	
51st Street and West Drive						
Approach Lane						
SB	160'	0'	0'	0'	20'	

All intersections lane movements are expected to have calculated 95% queues within their existing or proposed storage areas.

Note: A pass-by reduction was not applied to the mixed-use component of the trip generation used for these analyses.

INTERSECTION STOPPING AND SIGHT DISTANCE ANALYSES

Southbound Rainbow Boulevard adjacent to the proposed site is posted as 35 mph and is on a 4.5% downgrade. The required stopping sight distance is measured as the distance where from a 3.5' height, a 2' high object may be seen in the roadway. Based on Table 4-12 of KDOT's Access Management Policy, the required distance is 264'.

Field measurements were taken and found the existing stopping sight distance for southbound Rainbow Boulevard to 50th Terrace to be 292'. There is adequate stopping distance for southbound Rainbow as it approached 50th Terrace.

Intersection sight distance requirements for 50th Terrace and Rainbow were pulled from Table 4-14 of the KDOT Policy. The required intersection sight distance for a 50th Terrace right-turn onto Rainbow is 335' and is available. The required intersection sight distance for a 50th Terrace left-turn onto Rainbow is 415' and is not available.

There is not adequate intersection site distance for a left-turn movement from 50th Terrace onto Rainbow Boulevard. This distance could be met if the proposed access point was moved further south to the northern driveway of St. Rose Church and Rainbow Boulevard.

CRASH ANALYSES

The Kansas Department of Transportation (KDOT) provided accident data for Rainbow Boulevard from 50th Street to 51st Street during the 5-year period between 2018 and 2022.

Based on the provided data, no intersections reported an average of more than one accident per year during the reporting period (this is less than the requirement for an accident-based traffic signal warrant). A summary of the data can be seen in Table 6.

Table 6 - Crash Analysis Summary						
Rainbow Boulevard Intersection	Five Year (2018-2022) Accident Totals					
	PDO	Injury	Fatal	Total	Reported Acc. / Year	Reported Acc. / MEV
50 th Street	2	2	0	4	0.8	0.127
50 th Terrace	1	0	0	1	0.2	0.032
51 st Street	1	1	0	1	0.2	0.032

The KDOT Traffic Count map indicates a 24-hour traffic volume of 17,200 vehicles per day on Rainbow Boulevard just north of Shawnee Mission Parkway in Year 2017. The Accident Rate per Million Entering Vehicles @ 50th and Rainbow is calculated as:

$$\frac{(4 \text{ accidents}) * (1,000,000)}{(17,200 \text{ entering vehicles per day}) * (365 \text{ days/year}) * (5 \text{ years})} = 0.127 \text{ Acc./MEV}$$

Three of the six reported accidents over the period were fixed object related.

ACCESS MANAGEMENT

By KDOT standards, Rainbow Boulevard is best classified as a Class B roadway, as it is located on the National Highway System. 50th Street, 50th Terrace, and 51st Street are best classified as Class E roadways, as they provide local service only for very short trips.

50th Terrace is situated 220 feet south of 50th Street and currently forms a T-intersection with Rainbow Boulevard. The proposed site adds a fourth leg to the existing intersection. See Figure 9.

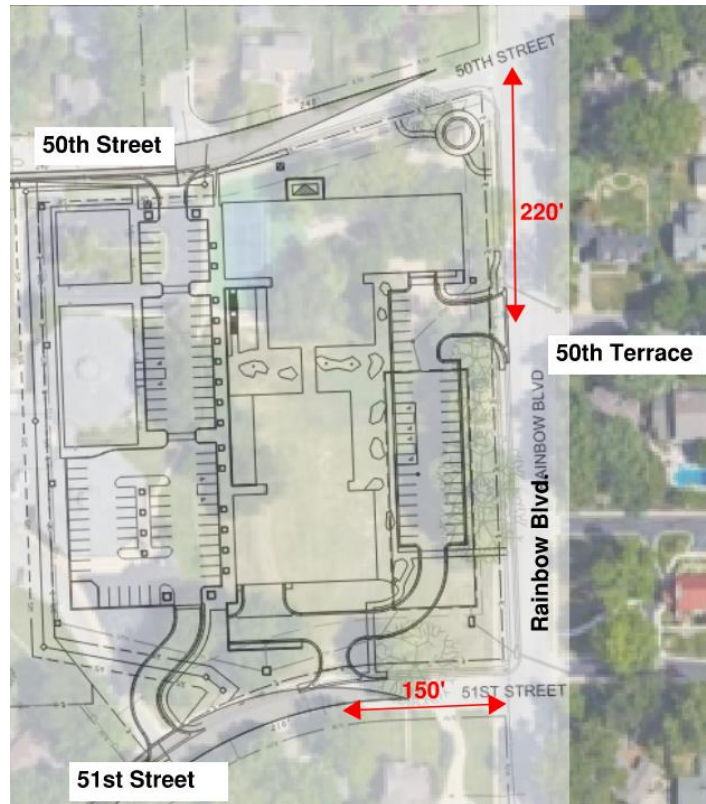


Figure 9: Access Points

With Rainbow being a 35-mph Class B roadway, Table 4-6 of the KDOT Access Management Policy was reviewed to determine unsignalized access spacing. With 50th Terrace already existing 220 feet south of 50th Street, a case for an area type of central business district (CBD) can be made. CBD indicates 205-foot spacing criteria.

Table 4-6. Unsignalized access spacing criteria

Access Route Classification	Area Type	Posted Speed Limit (mph)										
		20	25	30	35	40	45	50	55	60	65	70
B	Undeveloped				350	420	515	610	720	825	955	1075
	Developed	115	170	225	295	365	450	535	640	740		
	CBD	85	120	155	205							

Figure 10: KDOT Unsignalized Access Spacing

ACCESS MANAGEMENT (continued)

Signalized Intersection Influence Area

KDOT Access Management Policy provides guidelines for the upstream and downstream intersection influence area of a signalized intersection. Figure 4-17 and Table 4-4 of the Policy have been reviewed for the signalized intersection of 50th Street and Rainbow Boulevard which is in a developed area.

The upstream functional area for northbound Rainbow Boulevard as it approaches 50th Street is the sum of reaction time at 35mph (80') plus a deceleration distance (220') and two times the calculated northbound 95% queue ($2 * 173'$ (see Table 5) = 346') which totals 646'.

A variance would be required to meet KDOT's upstream intersection influence area for any new driveway adjacent to the proposed site.

The downstream functional area for southbound Rainbow Boulevard as it departs 50th Street is 195'. The distance from 50th Terrace to 50th Street is 220'. No variance is required.

Unsignalized Access Spacing

KDOT Access Management Policy provides guidelines for unsignalized access spacing. Table 4-6 of the Policy has been reviewed for a developed Class B route with a posted speed of 35 mph. The access spacing is found to be 295'.

A variance would be required to meet KDOT's unsignalized spacing criteria for any new driveway adjacent to the proposed site as there is only 535' between 50th Street and 51st Street

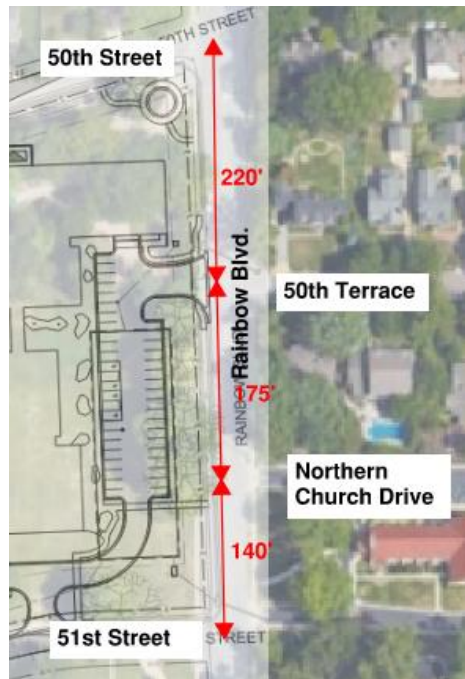


Figure 10: Access Spacing

KDOT RECOMMENDED LEFT-TURN LANE WARRANTS

KDOT Access Management Policy provides guidelines for left-turn lane warrants, which were reviewed. The northbound Rainbow Boulevard existing + proposed traffic volumes found in Figure 8 are shown in the following tables which conclude that left-turn lane recommended warrants are met at 50th Terrace and 51st Street. See Figure 11 below.

50th Terrace @ Rainbow

Table 4-28. Recommended left-turn lane warrants for four-lane highways

Left-Turn Volume V_L (vph)	4-Lane Undivided Opposing Volume V_o (vph)	4-Lane Divided Opposing Volume V_o (vph)	
≥ 29	Turn lane not warranted unless $V_o > 400$ vph	Turn lane not warranted unless $V_o > 400$ vph	
28		422	
26		474	
24		530	
22		589	
20		652	
18		719	
16		793	
14		873	
12		414 962	962
10		542 1062	1062
8		690 1179	1179
6		867 1319	1319
4	1094 1499	1499	
2	1429 1762	1762	

AM = 25
PM = 18
AM = 497 Warranted
PM = 908 Warranted

51st Street @ Rainbow

Table 4-28. Recommended left-turn lane warrants for four-lane highways

Left-Turn Volume V_L (vph)	4-Lane Undivided Opposing Volume V_o (vph)	4-Lane Divided Opposing Volume V_o (vph)	
≥ 29	Turn lane not warranted unless $V_o > 400$ vph	Turn lane not warranted unless $V_o > 400$ vph	
28		422	
26		474	
24		530	
22		589	
20		652	
18		719	
16		793	
14		873	
12		414 962	962
10		542 1062	1062
8		690 1179	1179
6		867 1319	1319
4	1094 1499	1499	
2	1429 1762	1762	

AM = 39
PM = 27
AM = 508 Warranted
PM = 920 Warranted

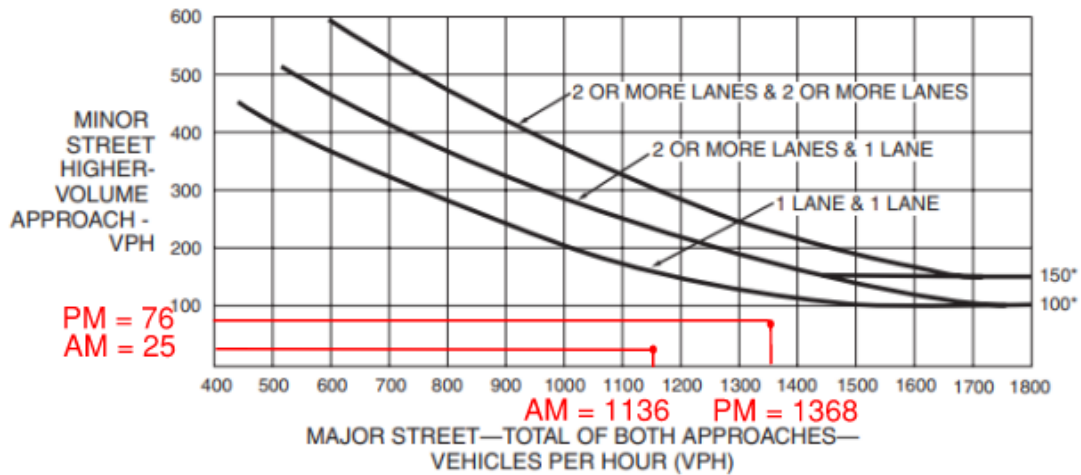
Figure 11: Left-Turn Lane Warrants

TRAFFIC SIGNAL WARRANT

The Manual on Uniform Traffic Control Devices was reviewed for a peak hour traffic warrant for the intersection of 51st Street and Rainbow Boulevard for the existing + proposed conditions. The result from that analysis may be seen in Figure 12.

51st Street @ Rainbow

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 12: Peak Hour Traffic Signal Warrant

FUTURE YEAR 2043 CONDITIONS

KDOT approved the use of a 0.5% Annual Growth Rate for 20-years to Rainbow Boulevard traffic to identify 20-year through volumes. That growth factor was applied to the Rainbow Boulevard volumes in Figure 8 and may be seen in Figure 13.

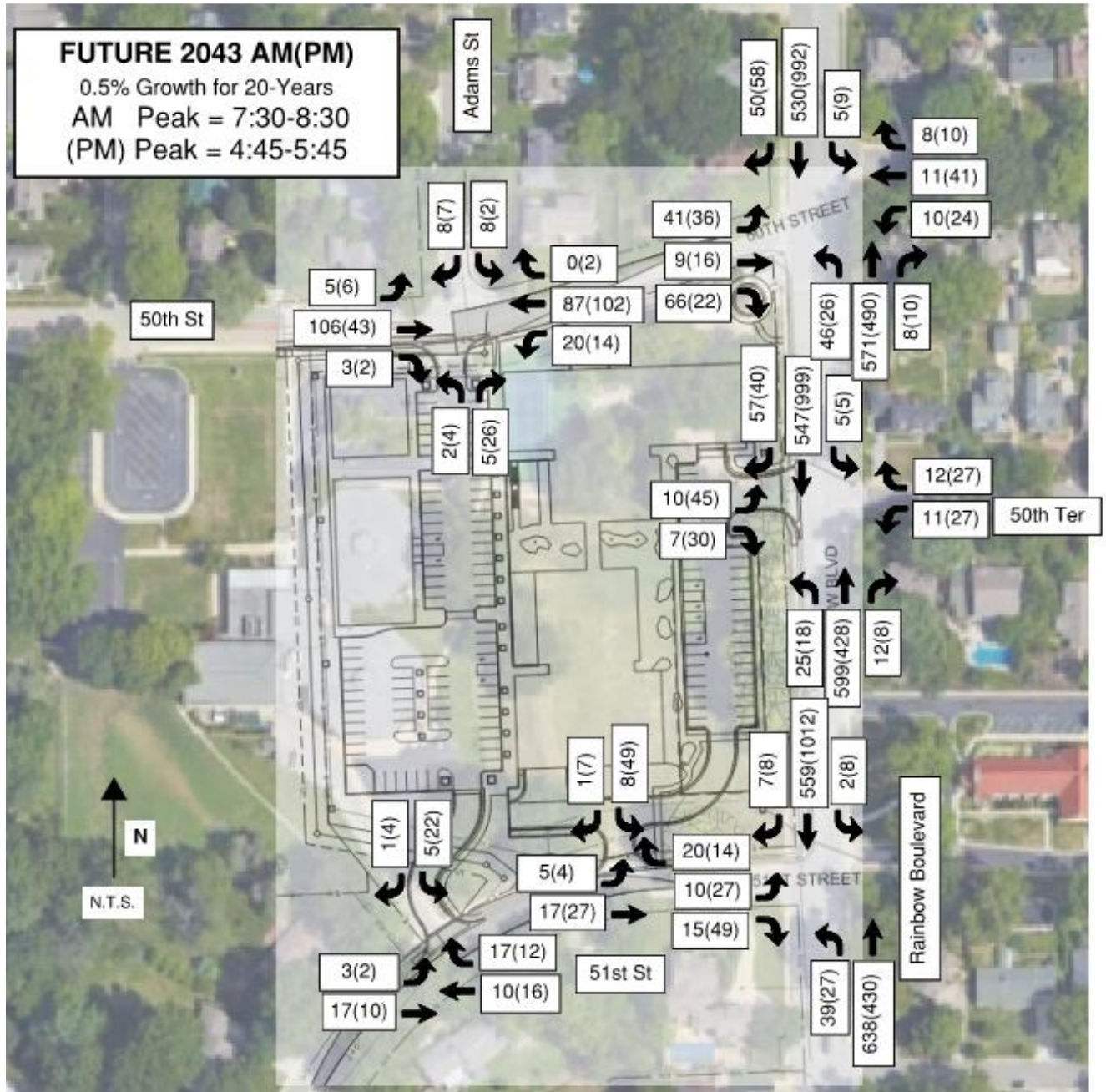


Figure 13: Future Year 2043 Conditions

FUTURE YEAR 2043 CONDITIONS (continued)

Intersection capacity analyses were conducted on the three intersections along Rainbow Boulevard for the year 2043 condition and can be seen in Table 7.

Table 7 – Future 2043 Conditions						
Intersection		AM		PM		
		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	
50th and Rainbow Boulevard (Signalized Intersection)						
	NB	11.9	B	11.1	B	
	SB	11.5	B	16.2	B	
	EB	33.7	D	38.7	D	
	WB	45.2	D	37.7	D	
50th Terrace and Rainbow Boulevard (Two-Way Stop)						
	NB	0.5	A	0.6	A	
	SB	0.1	A	0.1	A	
	EB	19.8	C	52.7	F	
	WB	18.5	C	22.7	C	
51st and Rainbow Boulevard (Eastbound One-Way Stop)						
	NB	0.8	A	0.9	A	
	SB	0.0	A	0.2	A	
	EB	17.6	C	37.8	E	

All intersection movements remain at LOS D or above with the exception of the eastbound movements of 50th Terrace and 51st Street which fall to LOS F and E respectively.

Consideration should be given to adding an eastbound right-turn lane for 51st Street which would keep that approach at LOS D in future conditions. This improvement would also help with the existing + proposed condition.

There is not much that can be done to improve the level of service of the 50th Terrace eastbound approach if the 20-year growth rates are indeed met.

FINDINGS AND RECOMMENDATIONS

This traffic study has conducted traffic counts, provided a traffic distribution, trip generation and analyses for the proposed 50th and Rainbow development.

The trip generation in Table 1 (page 8) is based on the ITE trip generation manual for the proposed land uses. These represent conservative estimates as pass-by and internal capture factors were not applied. The trips were added to the existing traffic counts taken on Wednesday, September 6th and may be seen in Figure 8 (page 11).

Intersection capacity analyses were completed for all of the study intersections and may be seen in Table 3 (page 13). For all movements except one (the eastbound approach of 50th Terrace and Rainbow) the anticipated LOS is D or above.

A review of the PM school peak versus the PM peak hour may be seen in Table 4 (page 14). While there is concern about the impact of the proposed development during the school peak, it is not substantiated by the study findings. PM peak hour LOS's are lower than PM school peak LOS's.

Queuing analyses were completed for all the study intersections and may be seen in Table 5 (page 15). All intersections lane movements are expected to have calculated 95% queues within their existing or proposed storage areas.

Intersection and stopping sight distances were field verified (page 16). There is adequate stopping sight distance for southbound Rainbow Boulevard as it approaches 50th Terrace. There is not; however, adequate left-turn sight distance from eastbound 50th Terrace. This requirement could be met if the proposed driveway is moved from 50th Terrace to the northern driveway of St. Rose Church.

There has been no significant reported crash experience along Rainbow Boulevard over the past 5-years.

Per KDOT policy, the upstream functional area for northbound Rainbow Boulevard as it approaches 50th Street is calculated at 646' (page 19). A KDOT variance would be required for any new driveway along Rainbow Boulevard to meet this requirement. Currently, 50th Terrace, St. Rose Church driveway and 51st Street do not meet this requirement.

Per KDOT policy, unsignalized access spacing for a 35 mph Class B roadway is 295'. Following that criterion, no access would be allowed between 50th Street and 51st Street. A variance is required.

KDOT left-turn lane warrant analyses indicate that both northbound Rainbow to 50th Terrace and 51st Street warrant consideration of an auxiliary northbound left-turn lane (page 20). Variances would be required from KDOT for these movements.

An annual 0.5% growth rate was applied for 20-years to determine ultimate year 2043 traffic volumes. Capacity analyses were completed for the three study intersections along Rainbow in Table 7 (page 23). For all movements except two (eastbound approaches of 50th Terrace and 51st Street) the anticipated LOS is D or above. The eastbound approach to 51st Street would return to LOS D with the addition of an eastbound right-turn lane.

FINDINGS AND RECOMMENDATIONS (continued)

Recommendation 1: Relocate the proposed site entrance at 50th Terrace to the northern driveway of St. Rose Church. Sign the two-lane eastbound approach as Left-Turn Only and Right-Turn Only. This driveway relocation provides adequate intersection sight distances, and should be expected to operate in a similar fashion as the analyses performed at the 50th Terrace location.

Recommendation 2: Consider widening eastbound 51st Street in the future to accommodate a second eastbound right-turn lane at Rainbow Boulevard. This public improvement would improve delays in the near term, and keep the intersection at LOS D in the future.

Recommendation 3: Make the developer aware that the eastbound approach from their lower parking area to Rainbow Boulevard may experience backups during the PM peak hour.

With implementation of these recommendations, the following KDOT variances are required:

- Variance for upstream functional area at the signalized intersection of 50th Street
- Variance for unsignalized access spacing
- Variance for northbound left-turn warrant at northern St. Rose Church driveway
- Variance for northbound left-turn warrant at 51st Street

This study has been submitted to both the City and KDOT for consideration.

If there are any questions regarding this traffic study, please contact me at your convenience at 913-663-1900 or mark.sherfy@ibhc.com.

Sincerely,



Mark Sherfy, P.E., PTOE
Traffic Engineer
BHC



LIST OF APPENDICES

APPENDIX A - TRAFFIC COUNTS

- 50th Street and Booth Street
- 50th Street and west school drive
- 50th Street and Adams Street
- 50th Street and Rainbow Boulevard
- 50th Terrace and Rainbow Boulevard
- 51st Street and Rainbow Boulevard
- 51st Street and west school drive

APPENDIX B – ITE TRIP GENERATION REPORTS

APPENDIX C - CAPACITY AND QUEUING ANALYSES

- 50th Street and Adams Street
 - AM Existing
 - PM School Existing (2:45-3:45)
 - PM Existing
 - AM Existing+Proposed
 - PM Existing+Proposed
- 50th Street and Rainbow Boulevard
 - AM Existing
 - PM School Existing (2:45-3:45)
 - PM Existing
 - AM Existing+Proposed
 - PM Existing+Proposed
 - AM Future 2043
 - PM Future 2043
- 50th Terrace and Rainbow Boulevard
 - AM Existing
 - PM School Existing (2:45-3:45)
 - PM Existing
 - AM Existing+Proposed
 - PM Existing+Proposed
 - AM Future 2043
 - PM Future 2043
- 51st Street and Rainbow Boulevard
 - AM Existing
 - PM School Existing (2:45-3:45)
 - PM Existing
 - AM Existing+Proposed
 - PM Existing+Proposed
 - AM Future 2043
 - PM Future 2043
- 51st Street and East Drive
 - AM Existing+Proposed
 - PM Existing+Proposed
- 51st and West Drive
 - AM Existing
 - PM Existing
 - AM Existing+Proposed
 - PM Existing+Proposed

West 50th Street & Booth Street - TMC

Wed Sep 6, 2023

Full Length (7:30 AM-8:30 AM, 2:45 PM-5:45 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1101962, Location: 39.037369, -94.614012



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Booth St Southbound						W 50th St Westbound						Elementary Driveway Northbound						W 50th St Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2023-09-06 7:30AM	0	0	1	0	1	0	0	7	9	0	16	0	11	1	3	0	15	0	10	11	0	0	21	0	53
7:45AM	2	0	0	0	2	33	3	10	24	0	37	0	30	1	4	0	35	1	20	9	4	0	33	0	107
Hourly Total	2	0	1	0	3	33	3	17	33	0	53	0	41	2	7	0	50	1	30	20	4	0	54	0	160
8:00AM	2	1	0	0	3	99	1	11	15	0	27	1	29	0	1	0	30	2	14	11	4	0	29	0	89
8:15AM	3	0	1	0	4	1	0	9	0	0	9	0	2	0	3	0	5	2	1	13	0	0	14	0	32
Hourly Total	5	1	1	0	7	100	1	20	15	0	36	1	31	0	4	0	35	4	15	24	4	0	43	0	121
2:45PM	0	0	1	0	1	2	1	11	1	0	13	0	0	0	1	0	1	2	0	10	7	0	17	0	32
Hourly Total	0	0	1	0	1	2	1	11	1	0	13	0	0	0	1	0	1	2	0	10	7	0	17	0	32
3:00PM	1	0	2	0	3	88	5	5	7	1	18	1	12	0	1	0	13	4	1	7	0	0	8	2	42
3:15PM	2	0	0	0	2	25	0	10	27	0	37	1	36	0	6	0	42	3	1	9	1	0	11	1	92
3:30PM	0	0	0	0	0	4	0	17	1	0	18	0	3	0	6	0	9	20	3	13	0	0	16	0	43
3:45PM	0	0	1	0	1	4	3	7	0	0	10	1	2	0	1	0	3	23	1	8	0	0	9	0	23
Hourly Total	3	0	3	0	6	121	8	39	35	1	83	3	53	0	14	0	67	50	6	37	1	0	44	3	200
4:00PM	1	0	0	0	1	0	0	10	0	0	10	0	1	0	2	0	3	3	2	15	0	0	17	0	31
4:15PM	1	0	0	0	1	2	1	14	0	0	15	1	1	0	3	0	4	3	3	17	1	0	21	1	41
4:30PM	2	0	0	0	2	5	3	5	1	0	9	2	0	0	5	0	5	1	1	8	0	0	9	0	25
4:45PM	2	0	0	0	2	6	0	14	4	0	18	1	0	0	2	0	2	1	2	12	0	0	14	3	36
Hourly Total	6	0	0	0	6	13	4	43	5	0	52	4	2	0	12	0	14	8	8	52	1	0	61	4	133
5:00PM	0	1	1	0	2	4	3	28	1	0	32	0	2	0	4	0	6	2	5	17	2	0	24	2	64
5:15PM	1	0	0	0	1	5	1	24	2	0	27	1	0	1	7	0	8	2	11	10	1	0	22	2	58
5:30PM	0	0	0	0	0	0	0	32	1	0	33	0	2	0	1	0	3	6	3	8	0	0	11	0	47
Hourly Total	1	1	1	0	3	9	4	84	4	0	92	1	4	1	12	0	17	10	19	35	3	0	57	4	169
Total	17	2	7	0	26	278	21	214	93	1	329	9	131	3	50	0	184	75	78	178	20	0	276	11	815
% Approach	65.4%	7.7%	26.9%	0%	-	-	6.4%	65.0%	28.3%	0.3%	-	-	71.2%	1.6%	27.2%	0%	-	-	28.3%	64.5%	7.2%	0%	-	-	-
% Total	2.1%	0.2%	0.9%	0%	3.2%	-	2.6%	26.3%	11.4%	0.1%	40.4%	-	16.1%	0.4%	6.1%	0%	22.6%	-	9.6%	21.8%	2.5%	0%	33.9%	-	-
Lights	16	2	7	0	25	-	21	212	92	1	326	-	129	3	50	0	182	-	78	174	20	0	272	-	805
% Lights	94.1%	100%	100%	0%	96.2%	-	100%	99.1%	98.9%	100%	99.1%	-	98.5%	100%	100%	0%	98.9%	-	100%	97.8%	100%	0%	98.6%	-	98.8%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	1	0	0	0	1	-	0	2	1	0	3	-	2	0	0	0	2	-	0	4	0	0	4	-	10
% Buses and Single-Unit Trucks	5.9%	0%	0%	0%	3.8%	-	0%	0.9%	1.1%	0%	0.9%	-	1.5%	0%	0%	0%	1.1%	-	0%	2.2%	0%	0%	1.4%	-	1.2%
Pedestrians	-	-	-	-	-	259	-	-	-	-	8	-	-	-	-	72	-	-	-	-	-	9	-		
% Pedestrians	-	-	-	-	-	93.2%	-	-	-	-	88.9%	-	-	-	-	96.0%	-	-	-	-	-	81.8%	-		
Bicycles on Crosswalk	-	-	-	-	-	19	-	-	-	-	1	-	-	-	-	3	-	-	-	-	-	2	-		
% Bicycles on Crosswalk	-	-	-	-	-	6.8%	-	-	-	-	11.1%	-	-	-	-	4.0%	-	-	-	-	-	18.2%	-		

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

West 50th Street and west Elementary Dr - TMC

Wed Sep 6, 2023

Full Length (7:30 AM-8:30 AM, 2:45 PM-5:45 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1101963, Location: 39.037365, -94.613384



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	W 50th St Westbound					Elementary Driveway Northbound					W 50th St Eastbound					Int
	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	
Time																
2023-09-06 7:30AM	17	5	0	22	0	0	0	0	0	0	6	17	0	23	0	45
7:45AM	39	2	0	41	0	0	0	1	1	15	5	35	0	40	13	82
Hourly Total	56	7	0	63	0	0	0	1	1	15	11	52	0	63	13	127
8:00AM	25	1	0	26	0	0	0	0	0	35	1	39	0	40	36	66
8:15AM	9	1	0	10	0	0	0	0	0	2	1	15	0	16	0	26
Hourly Total	34	2	0	36	0	0	0	0	0	37	2	54	0	56	36	92
2:45PM	13	5	0	18	0	1	0	0	1	0	1	11	0	12	0	31
Hourly Total	13	5	0	18	0	1	0	0	1	0	1	11	0	12	0	31
3:00PM	24	4	1	29	1	0	0	0	0	13	1	20	0	21	14	50
3:15PM	30	4	1	35	1	0	0	0	0	41	0	46	0	46	44	81
3:30PM	18	0	0	18	0	0	0	0	0	24	2	14	0	16	0	34
3:45PM	9	1	0	10	0	0	0	0	0	23	1	9	1	11	3	21
Hourly Total	81	9	2	92	2	0	0	0	0	101	4	89	1	94	61	186
4:00PM	10	0	0	10	0	0	0	1	1	3	2	14	0	16	0	27
4:15PM	16	2	1	19	0	0	0	0	0	4	6	11	0	17	0	36
4:30PM	9	0	0	9	0	0	0	0	0	3	1	8	0	9	0	18
4:45PM	18	0	0	18	1	1	0	1	2	4	0	11	0	11	3	31
Hourly Total	53	2	1	56	1	1	0	2	3	14	9	44	0	53	3	112
5:00PM	32	0	0	32	0	0	0	0	0	4	3	16	0	19	0	51
5:15PM	29	3	0	32	0	0	0	0	0	5	3	8	0	11	0	43
5:30PM	33	1	0	34	0	0	0	0	0	7	0	10	0	10	0	44
Hourly Total	94	4	0	98	0	0	0	0	0	16	6	34	0	40	0	138
Total	331	29	3	363	3	2	0	3	5	183	33	284	1	318	113	686
% Approach	91.2%	8.0%	0.8%	-	-	40.0%	0%	60.0%	-	-	10.4%	89.3%	0.3%	-	-	-
% Total	48.3%	4.2%	0.4%	52.9%	-	0.3%	0%	0.4%	0.7%	-	4.8%	41.4%	0.1%	46.4%	-	-
Lights	329	18	1	348	-	2	0	3	5	-	30	282	1	313	-	666
% Lights	99.4%	62.1%	33.3%	95.9%	-	100%	0%	100%	100%	-	90.9%	99.3%	100%	98.4%	-	97.1%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	2	11	2	15	-	0	0	0	0	-	3	2	0	5	-	20
% Buses and Single-Unit Trucks	0.6%	37.9%	66.7%	4.1%	-	0%	0%	0%	0%	-	9.1%	0.7%	0%	1.6%	-	2.9%
Pedestrians	-	-	-	-	2	-	-	-	-	167	-	-	-	-	103	-
% Pedestrians	-	-	-	-	66.7%	-	-	-	-	91.3%	-	-	-	-	91.2%	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	16	-	-	-	-	10	-
% Bicycles on Crosswalk	-	-	-	-	33.3%	-	-	-	-	8.7%	-	-	-	-	8.8%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

West 50th Street and east Elementary Dr - TMC

Wed Sep 6, 2023

Full Length (7:30 AM-8:30 AM, 2:45 PM-5:45 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1101964, Location: 39.037377, -94.612976



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Adams St Southbound						W 50th St Westbound						Elementary Driveway Northbound						W 50th St Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-09-06 7:30AM	2	0	2	0	4	0	0	19	0	0	19	0	0	0	0	0	0	0	0	14	0	0	14	0	37
7:45AM	1	0	2	0	3	1	0	38	0	0	38	0	6	0	0	0	6	18	0	33	2	0	35	0	82
Hourly Total	3	0	4	0	7	1	0	57	0	0	57	0	6	0	0	0	6	18	0	47	2	0	49	0	119
8:00AM	3	0	4	0	7	9	0	22	0	0	22	0	3	0	0	0	3	32	0	37	3	0	40	2	72
8:15AM	2	0	0	0	2	1	0	8	0	0	8	0	2	0	1	0	3	2	0	16	0	0	16	0	29
Hourly Total	5	0	4	0	9	10	0	30	0	0	30	0	5	0	1	0	6	34	0	53	3	0	56	2	101
2:45PM	1	0	0	0	1	1	2	15	0	0	17	0	0	0	2	0	2	1	0	10	1	0	11	0	31
Hourly Total	1	0	0	0	1	1	2	15	0	0	17	0	0	0	2	0	2	1	0	10	1	0	11	0	31
3:00PM	8	0	0	0	8	4	6	24	0	0	30	0	1	0	0	0	1	10	0	14	4	0	18	1	57
3:15PM	4	0	1	0	5	5	3	27	0	0	30	5	7	0	0	0	7	31	0	43	6	0	49	1	91
3:30PM	1	0	1	0	2	0	1	9	0	0	10	1	0	0	7	0	7	20	0	13	1	0	14	0	33
3:45PM	2	0	1	0	3	1	0	8	0	0	8	1	0	0	1	0	1	13	0	10	0	1	11	0	23
Hourly Total	15	0	3	0	18	10	10	68	0	0	78	7	8	0	8	0	16	74	0	80	11	1	92	2	204
4:00PM	1	0	0	0	1	0	0	8	0	0	8	1	1	0	1	0	2	9	0	11	2	0	13	0	24
4:15PM	1	0	0	0	1	1	2	16	0	0	18	0	5	0	1	0	6	4	0	12	0	0	12	0	37
4:30PM	0	0	0	0	0	1	0	8	0	0	8	0	4	0	1	0	5	1	0	8	1	0	9	0	22
4:45PM	3	0	0	0	3	0	1	14	0	0	15	1	0	0	0	0	0	7	0	11	0	0	11	0	29
Hourly Total	5	0	0	0	5	2	3	46	0	0	49	2	10	0	3	0	13	21	0	42	3	0	45	0	112
5:00PM	1	0	0	0	1	1	0	28	0	0	28	7	1	0	2	0	3	5	0	12	3	0	15	2	47
5:15PM	1	0	1	0	2	2	1	29	0	0	30	0	1	0	2	0	3	4	0	6	3	0	9	2	44
5:30PM	2	0	1	0	3	0	0	31	0	0	31	2	3	0	1	0	4	6	0	10	0	0	10	0	48
Hourly Total	4	0	2	0	6	3	1	88	0	0	89	9	5	0	5	0	10	15	0	28	6	0	34	4	139
Total	33	0	13	0	46	27	16	304	0	0	320	18	34	0	19	0	53	163	0	260	26	1	287	8	706
% Approach	71.7%	0%	28.3%	0%	-	-	5.0%	95.0%	0%	0%	-	-	64.2%	0%	35.8%	0%	-	-	0%	90.6%	9.1%	0.3%	-	-	-
% Total	4.7%	0%	1.8%	0%	6.5%	-	2.3%	43.1%	0%	0%	45.3%	-	4.8%	0%	2.7%	0%	7.5%	-	0%	36.8%	3.7%	0.1%	40.7%	-	-
Lights	33	0	13	0	46	-	16	290	0	0	306	-	22	0	19	0	41	-	0	258	25	1	284	-	677
% Lights	100%	0%	100%	0%	100%	-	100%	95.4%	0%	0%	95.6%	-	64.7%	0%	100%	0%	77.4%	-	0%	99.2%	96.2%	100%	99.0%	-	95.9%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	0	0	0	0	-	0	14	0	0	14	-	12	0	0	0	12	-	0	2	1	0	3	-	29
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	4.6%	0%	0%	4.4%	-	35.3%	0%	0%	0%	22.6%	-	0%	0.8%	3.8%	0%	1.0%	-	4.1%
Pedestrians	-	-	-	-	-	25	-	-	-	-	-	18	-	-	-	-	-	145	-	-	-	-	-	6	-
% Pedestrians	-	-	-	-	-	92.6%	-	-	-	-	-	100%	-	-	-	-	-	89.0%	-	-	-	-	-	75.0%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	18	-	-	-	-	-	2	-
% Bicycles on Crosswalk	-	-	-	-	-	7.4%	-	-	-	-	-	0%	-	-	-	-	-	11.0%	-	-	-	-	-	25.0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

West 50th Street & Rainbow Boulevard - TMC

Wed Sep 6, 2023

Full Length (7:30 AM-8:30 AM, 2:45 PM-5:45 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1101966, Location: 39.037647, -94.611883



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Rainbow Blvd Southbound						W 50th St Westbound						Rainbow Blvd Northbound						W 50th St Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2023-09-06 7:30AM	4	89	0	0	93	0	3	2	0	0	5	0	2	132	15	0	149	0	9	4	3	0	16	0	263
7:45AM	14	118	0	0	132	0	1	4	1	0	6	12	1	133	19	0	153	16	24	1	12	0	37	6	328
Hourly Total	18	207	0	0	225	0	4	6	1	0	11	12	3	265	34	0	302	16	33	5	15	0	53	6	591
8:00AM	10	117	3	0	130	0	2	2	1	0	5	5	4	113	9	0	126	27	28	0	17	0	45	1	306
8:15AM	5	113	2	0	120	0	2	0	2	0	4	4	0	125	2	0	127	3	5	3	9	0	17	1	268
Hourly Total	15	230	5	0	250	0	4	2	3	0	9	9	4	238	11	0	253	30	33	3	26	0	62	2	574
2:45PM	2	112	2	0	116	0	4	4	3	0	11	3	3	74	7	0	84	4	6	3	3	0	12	1	223
Hourly Total	2	112	2	0	116	0	4	4	3	0	11	3	3	74	7	0	84	4	6	3	3	0	12	1	223
3:00PM	13	127	4	0	144	0	3	2	1	0	6	5	2	70	23	0	95	6	10	1	3	0	14	2	259
3:15PM	9	118	6	0	133	1	3	4	6	0	13	14	1	75	9	0	85	23	38	1	13	0	52	1	283
3:30PM	2	112	3	0	117	0	2	4	0	0	6	1	1	68	3	0	72	21	7	3	5	0	15	0	210
3:45PM	5	150	0	0	155	0	0	2	1	0	3	3	4	81	1	0	86	6	4	1	7	0	12	0	256
Hourly Total	29	507	13	0	549	1	8	12	8	0	28	23	8	294	36	0	338	56	59	6	28	0	93	3	1008
4:00PM	3	180	6	0	189	0	2	5	3	0	10	0	2	86	0	0	88	23	2	2	8	0	12	0	299
4:15PM	8	194	3	0	205	0	1	6	2	0	9	2	5	78	5	0	88	3	9	3	5	0	17	0	319
4:30PM	3	220	1	0	224	0	1	1	2	0	4	1	2	91	3	0	96	1	4	2	6	0	12	0	336
4:45PM	6	201	2	0	209	0	1	7	1	0	9	0	2	92	4	0	98	0	5	1	7	0	13	3	329
Hourly Total	20	795	12	0	827	0	5	19	8	0	32	3	11	347	12	0	370	27	20	8	26	0	54	3	1283
5:00PM	13	224	2	0	239	0	1	10	2	0	13	12	1	82	4	0	87	13	3	5	4	0	12	0	351
5:15PM	10	228	2	0	240	0	1	12	8	0	21	4	1	93	8	0	102	7	6	2	2	0	10	5	373
5:30PM	17	217	3	0	237	0	7	10	9	0	26	2	0	99	4	0	103	5	6	4	4	0	14	1	380
Hourly Total	40	669	7	0	716	0	9	32	19	0	60	18	2	274	16	0	292	25	15	11	10	0	36	6	1104
Total	124	2520	39	0	2683	1	34	75	42	0	151	68	31	1492	116	0	1639	158	166	36	108	0	310	21	4783
% Approach	4.6%	93.9%	1.5%	0%	-	-	22.5%	49.7%	27.8%	0%	-	-	1.9%	91.0%	7.1%	0%	-	-	53.5%	11.6%	34.8%	0%	-	-	-
% Total	2.6%	52.7%	0.8%	0%	56.1%	-	0.7%	1.6%	0.9%	0%	3.2%	-	0.6%	31.2%	2.4%	0%	34.3%	-	3.5%	0.8%	2.3%	0%	6.5%	-	-
Lights	124	2484	39	0	2647	-	34	75	41	0	150	-	31	1460	103	0	1594	-	153	36	106	0	295	-	4686
% Lights	100%	98.6%	100%	0%	98.7%	-	100%	100%	97.6%	0%	99.3%	-	100%	97.9%	88.8%	0%	97.3%	-	92.2%	100%	98.1%	0%	95.2%	-	98.0%
Articulated Trucks	0	4	0	0	4	-	0	0	0	0	0	-	0	3	0	0	3	-	0	0	0	0	0	-	7
% Articulated Trucks	0%	0.2%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0.1%
Buses and Single-Unit Trucks	0	32	0	0	32	-	0	0	1	0	1	-	0	29	13	0	42	-	13	0	2	0	15	-	90
% Buses and Single-Unit Trucks	0%	1.3%	0%	0%	1.2%	-	0%	0%	2.4%	0%	0.7%	-	0%	1.9%	11.2%	0%	2.6%	-	7.8%	0%	1.9%	0%	4.8%	-	1.9%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	68	-	-	-	-	-	154	-	-	-	-	-	20	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	97.5%	-	-	-	-	-	95.2%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	2.5%	-	-	-	-	-	4.8%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

West 50th Terrace & Rainbow Boulevard - TMC

Wed Sep 6, 2023

Full Length (7:30 AM-8:30 AM, 2:45 PM-5:45 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1101965, Location: 39.036957, -94.611879



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Rainbow Blvd Southbound					W 50th Terr Westbound					Rainbow Blvd Northbound					Int
	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	
2023-09-06 7:30AM	99	0	0	99	0	1	0	0	1	0	2	144	0	146	0	246
7:45AM	146	1	0	147	0	4	1	0	5	1	3	153	0	156	0	308
Hourly Total	245	1	0	246	0	5	1	0	6	1	5	297	0	302	0	554
8:00AM	140	2	0	142	0	6	1	0	7	0	2	116	0	118	0	267
8:15AM	112	2	0	114	0	1	9	0	10	0	5	127	0	132	0	256
Hourly Total	252	4	0	256	0	7	10	0	17	0	7	243	0	250	0	523
2:45PM	116	2	0	118	0	2	0	0	2	0	2	91	0	93	0	213
Hourly Total	116	2	0	118	0	2	0	0	2	0	2	91	0	93	0	213
3:00PM	132	1	0	133	0	4	0	0	4	0	1	91	0	92	0	229
3:15PM	168	1	0	169	0	5	14	0	19	0	2	78	0	80	0	268
3:30PM	120	0	0	120	0	2	7	0	9	0	3	68	0	71	0	200
3:45PM	157	1	0	158	0	3	2	0	5	0	1	83	0	84	0	247
Hourly Total	577	3	0	580	0	14	23	0	37	0	7	320	0	327	0	944
4:00PM	183	0	0	183	0	5	7	0	12	0	1	81	0	82	0	277
4:15PM	200	2	0	202	0	6	5	0	11	1	1	84	0	85	0	298
4:30PM	213	2	0	215	0	1	6	0	7	0	3	90	0	93	0	315
4:45PM	208	0	0	208	0	6	4	0	10	0	2	93	0	95	0	313
Hourly Total	804	4	0	808	0	18	22	0	40	1	7	348	0	355	0	1203
5:00PM	225	2	0	227	0	6	4	0	10	0	0	87	0	87	0	324
5:15PM	243	2	0	245	0	7	12	0	19	0	4	94	0	98	0	362
5:30PM	232	1	0	233	0	8	7	0	15	0	2	96	0	98	0	346
Hourly Total	700	5	0	705	0	21	23	0	44	0	6	277	0	283	0	1032
Total	2694	19	0	2713	0	67	79	0	146	2	34	1576	0	1610	0	4469
% Approach	99.3%	0.7%	0%	-	-	45.9%	54.1%	0%	-	-	2.1%	97.9%	0%	-	-	-
% Total	60.3%	0.4%	0%	60.7%	-	1.5%	1.8%	0%	3.3%	-	0.8%	35.3%	0%	36.0%	-	-
Lights	2643	18	0	2661	-	67	79	0	146	-	33	1533	0	1566	-	4373
% Lights	98.1%	94.7%	0%	98.1%	-	100%	100%	0%	100%	-	97.1%	97.3%	0%	97.3%	-	97.9%
Articulated Trucks	3	0	0	3	-	0	0	0	0	-	0	2	0	2	-	5
% Articulated Trucks	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	-	0%	0.1%	0%	0.1%	-	0.1%
Buses and Single-Unit Trucks	48	1	0	49	-	0	0	0	0	-	1	41	0	42	-	91
% Buses and Single-Unit Trucks	1.8%	5.3%	0%	1.8%	-	0%	0%	0%	0%	-	2.9%	2.6%	0%	2.6%	-	2.0%
Pedestrians	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

West 51st Street & Rainbow Boulevard (north) - TMC

Wed Sep 6, 2023

Full Length (7:30 AM-8:30 AM, 2:45 PM-5:45 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1101967, Location: 39.036062, -94.611884



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Rainbow Blvd Southbound					Access Westbound					Rainbow Blvd Northbound					W 51st St Eastbound					Int			
	R	T	L	U	App Ped*	R	T	L	U	App Ped*	R	T	L	U	App Ped*	R	T	L	U	App Ped*				
2023-09-06 7:30AM	3	95	0	0	98	0	0	0	0	0	0	150	1	0	151	0	1	0	3	0	4	0	253	
7:45AM	0	148	0	0	148	0	0	0	0	0	0	155	4	0	159	0	2	0	2	0	4	6	311	
Hourly Total	3	243	0	0	246	0	0	0	0	0	0	305	5	0	310	0	3	0	5	0	8	6	564	
8:00AM	1	138	2	0	141	0	0	0	0	0	0	120	0	0	120	0	1	0	1	0	2	7	263	
8:15AM	3	120	0	0	123	0	0	0	0	0	0	130	0	0	130	0	2	0	0	0	2	1	255	
Hourly Total	4	258	2	0	264	0	0	0	0	0	0	250	0	0	250	0	3	0	1	0	4	8	518	
2:45PM	2	114	0	0	116	0	0	0	0	0	0	92	0	0	92	0	0	0	0	0	0	0	208	
Hourly Total	2	114	0	0	116	0	0	0	0	0	0	92	0	0	92	0	0	0	0	0	0	0	208	
3:00PM	3	130	0	0	133	0	0	0	0	0	0	92	1	0	93	0	0	0	0	0	0	3	226	
3:15PM	6	173	0	0	179	0	0	0	0	0	0	77	1	0	78	0	2	0	2	0	4	11	261	
3:30PM	0	121	0	0	121	0	0	0	0	0	0	70	0	0	70	0	1	0	0	0	1	1	192	
3:45PM	1	161	0	0	162	0	0	0	0	0	0	85	0	0	85	0	0	0	0	0	0	0	247	
Hourly Total	10	585	0	0	595	0	0	0	0	0	0	324	2	0	326	0	3	0	2	0	5	15	926	
4:00PM	3	185	0	0	188	0	0	0	0	0	1	91	0	0	91	0	0	0	0	0	0	4	279	
4:15PM	2	210	0	0	212	0	0	0	0	0	1	87	0	0	87	0	1	0	0	0	1	0	300	
4:30PM	4	222	1	0	227	0	0	0	0	0	0	94	1	0	95	0	0	0	3	0	3	0	325	
4:45PM	3	203	2	0	208	0	0	0	0	0	1	95	0	0	95	0	0	0	1	0	1	0	304	
Hourly Total	12	820	3	0	835	0	0	0	0	0	3	367	1	0	368	0	1	0	4	0	5	4	1208	
5:00PM	1	216	0	0	217	0	0	0	0	0	0	89	0	0	92	0	0	1	0	0	1	0	310	
5:15PM	4	245	2	0	251	0	0	0	0	0	0	94	0	0	95	0	1	0	1	0	2	1	348	
5:30PM	0	226	4	0	230	0	0	0	0	0	2	95	1	0	99	0	1	0	1	0	2	1	331	
Hourly Total	5	687	6	0	698	0	0	0	0	0	2	278	1	0	286	0	2	1	2	0	5	2	989	
Total	36	2707	11	0	2754	0	0	0	0	0	5	7	1616	9	1632	0	12	1	14	0	27	35	4413	
% Approach	1.3%	98.3%	0.4%	0%	-	-	0%	0%	0%	0%	-	0.4%	99.0%	0.6%	0%	-	44.4%	3.7%	51.9%	0%	-	-	-	
% Total	0.8%	61.3%	0.2%	0%	62.4%	-	0%	0%	0%	0%	0%	0.2%	36.6%	0.2%	0%	37.0%	0.3%	0%	0.3%	0%	0.6%	-	-	
Lights	34	2657	11	0	2702	-	0	0	0	0	0	7	1570	7	0	1584	-	10	1	13	0	24	-	4310
% Lights	94.4%	98.2%	100%	0%	98.1%	-	0%	0%	0%	0%	-	100%	97.2%	77.8%	0%	97.1%	-	83.3%	100%	92.9%	0%	88.9%	-	97.7%
Articulated Trucks	0	3	0	0	3	-	0	0	0	0	0	0	3	0	0	3	-	0	0	0	0	0	-	6
% Articulated Trucks	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0.1%
Buses and Single-Unit Trucks	2	47	0	0	49	-	0	0	0	0	0	0	43	2	0	45	-	2	0	1	0	3	-	97
% Buses and Single-Unit Trucks	5.6%	1.7%	0%	0%	1.8%	-	0%	0%	0%	0%	-	0%	2.7%	22.2%	0%	2.8%	-	16.7%	0%	7.1%	0%	11.1%	-	2.2%
Pedestrians	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	0	-	-	-	-	-	-	25	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	60.0%	-	-	-	-	-	-	-	-	-	-	-	71.4%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	0	-	-	-	-	-	-	10	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	40.0%	-	-	-	-	-	-	-	-	-	-	-	28.6%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

West 51st Terrace & rear driveway of Element... - TMC

Wed Sep 6, 2023

Full Length (7:30 AM-8:30 AM, 2:45 PM-5:45 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1101968, Location: 39.035909, -94.613021



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Elementary Driveway Rear Southbound					W 51st St Westbound					W 51st St Eastbound					Int
	R	L	U	App	Ped*	R	T	U	App	Ped*	T	L	U	App	Ped*	
Time																
2023-09-06 7:30AM	0	0	0	0	0	1	3	0	4	0	4	0	0	4	0	8
7:45AM	0	1	0	1	0	1	3	0	4	0	3	0	0	3	0	8
Hourly Total	0	1	0	1	0	2	6	0	8	0	7	0	0	7	0	16
8:00AM	0	0	0	0	1	1	0	0	1	0	1	0	0	1	0	2
8:15AM	1	0	0	1	0	0	3	0	3	0	2	0	0	2	0	6
Hourly Total	1	0	0	1	1	1	3	0	4	0	3	0	0	3	0	8
2:45PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
3:00PM	1	0	0	1	1	0	5	0	5	0	0	0	0	0	0	6
3:15PM	0	0	0	0	3	0	5	0	5	0	3	0	0	3	0	8
3:30PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
3:45PM	0	0	0	0	3	0	1	0	1	0	0	0	0	0	0	1
Hourly Total	1	0	0	1	7	0	11	0	11	0	4	0	0	4	0	16
4:00PM	0	0	0	0	4	0	3	0	3	0	0	0	0	0	0	3
4:15PM	0	0	0	0	3	0	2	0	2	0	1	0	0	1	0	3
4:30PM	0	0	0	0	0	0	4	0	4	0	3	0	0	3	0	7
4:45PM	0	0	0	0	3	0	3	0	3	0	0	0	0	0	0	3
Hourly Total	0	0	0	0	10	0	12	0	12	0	4	0	0	4	0	16
5:00PM	0	0	0	0	2	0	1	0	1	0	1	0	0	1	0	2
5:15PM	0	0	0	0	2	0	3	0	3	0	2	0	0	2	0	5
5:30PM	0	0	0	0	4	0	2	0	2	0	3	0	0	3	0	5
Hourly Total	0	0	0	0	8	0	6	0	6	0	6	0	0	6	0	12
Total	2	1	0	3	26	3	39	0	42	0	24	0	0	24	0	69
% Approach	66.7%	33.3%	0%	-	-	7.1%	92.9%	0%	-	-	100%	0%	0%	-	-	-
% Total	2.9%	1.4%	0%	4.3%	-	4.3%	56.5%	0%	60.9%	-	34.8%	0%	0%	34.8%	-	-
Lights	2	0	0	2	-	3	35	0	38	-	22	0	0	22	-	62
% Lights	100%	0%	0%	66.7%	-	100%	89.7%	0%	90.5%	-	91.7%	0%	0%	91.7%	-	89.9%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	1	0	1	-	0	4	0	4	-	2	0	0	2	-	7
% Buses and Single-Unit Trucks	0%	100%	0%	33.3%	-	0%	10.3%	0%	9.5%	-	8.3%	0%	0%	8.3%	-	10.1%
Pedestrians	-	-	-	-	22	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	84.6%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	15.4%	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

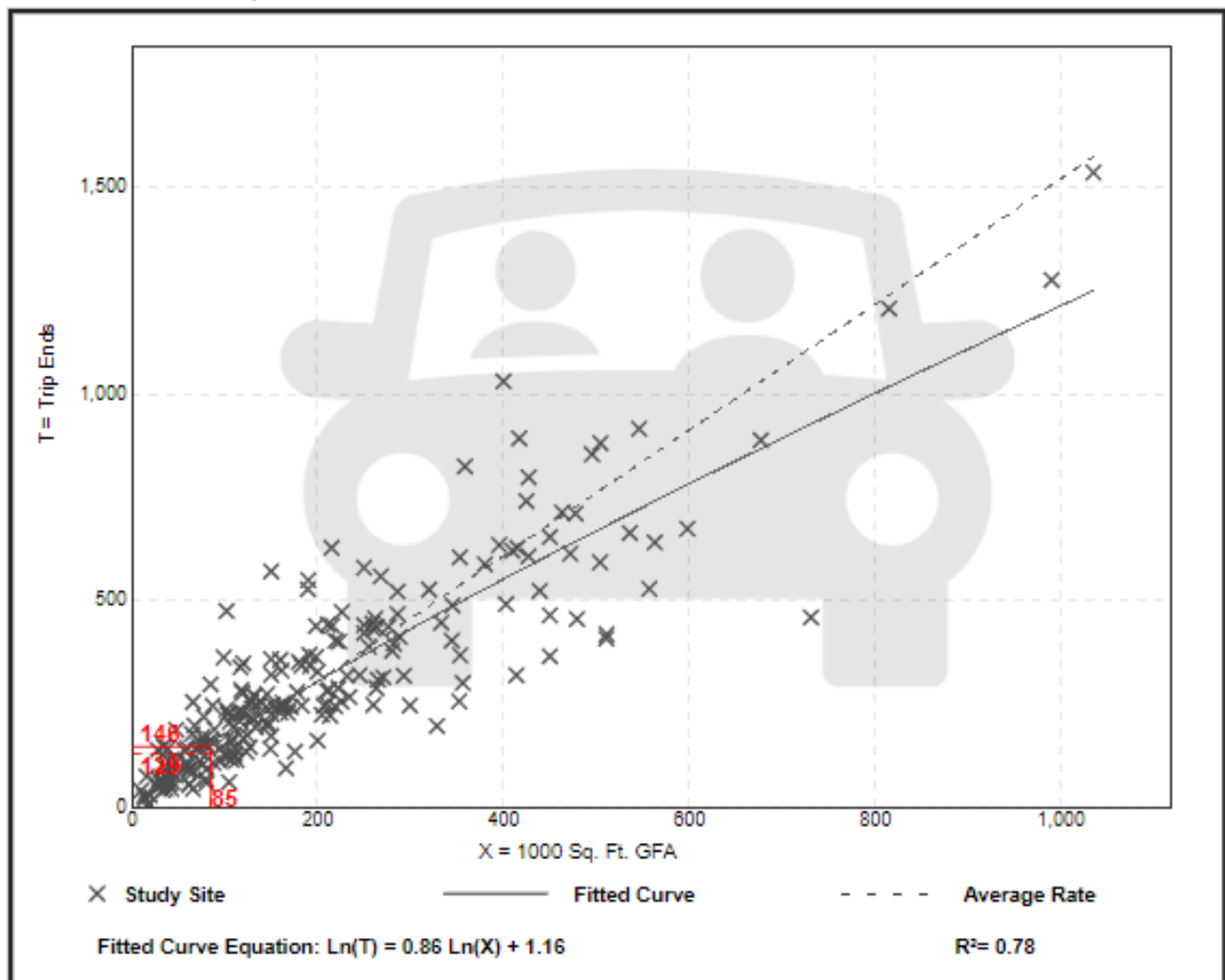
General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 221
 Avg. 1000 Sq. Ft. GFA: 201
 Directional Distribution: 88% entering, 12% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.52	0.32 - 4.93	0.58

Data Plot and Equation



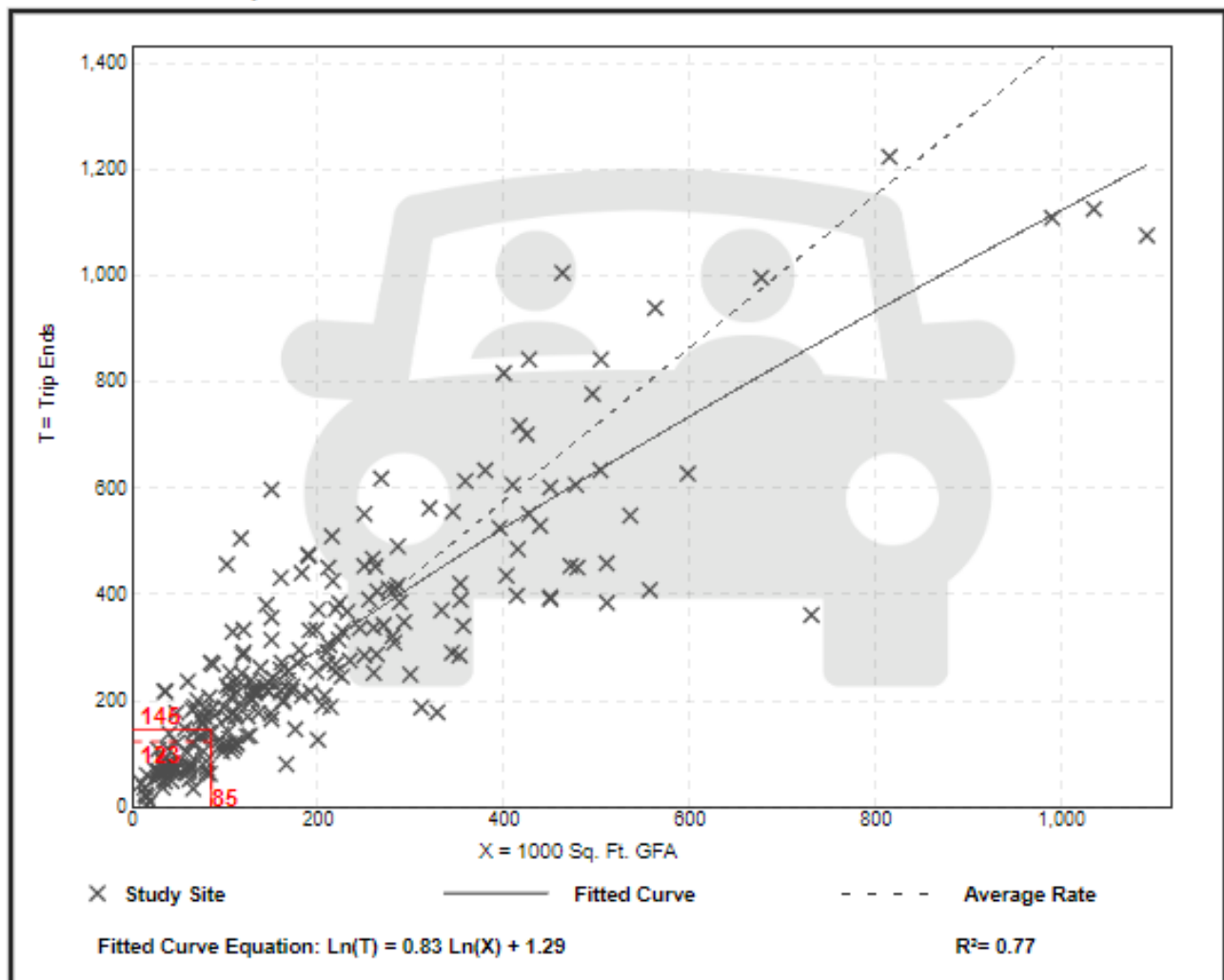
General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 232
 Avg. 1000 Sq. Ft. GFA: 199
 Directional Distribution: 17% entering, 83% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.44	0.26 - 6.20	0.60

Data Plot and Equation



Strip Retail Plaza (<40k)

(822)

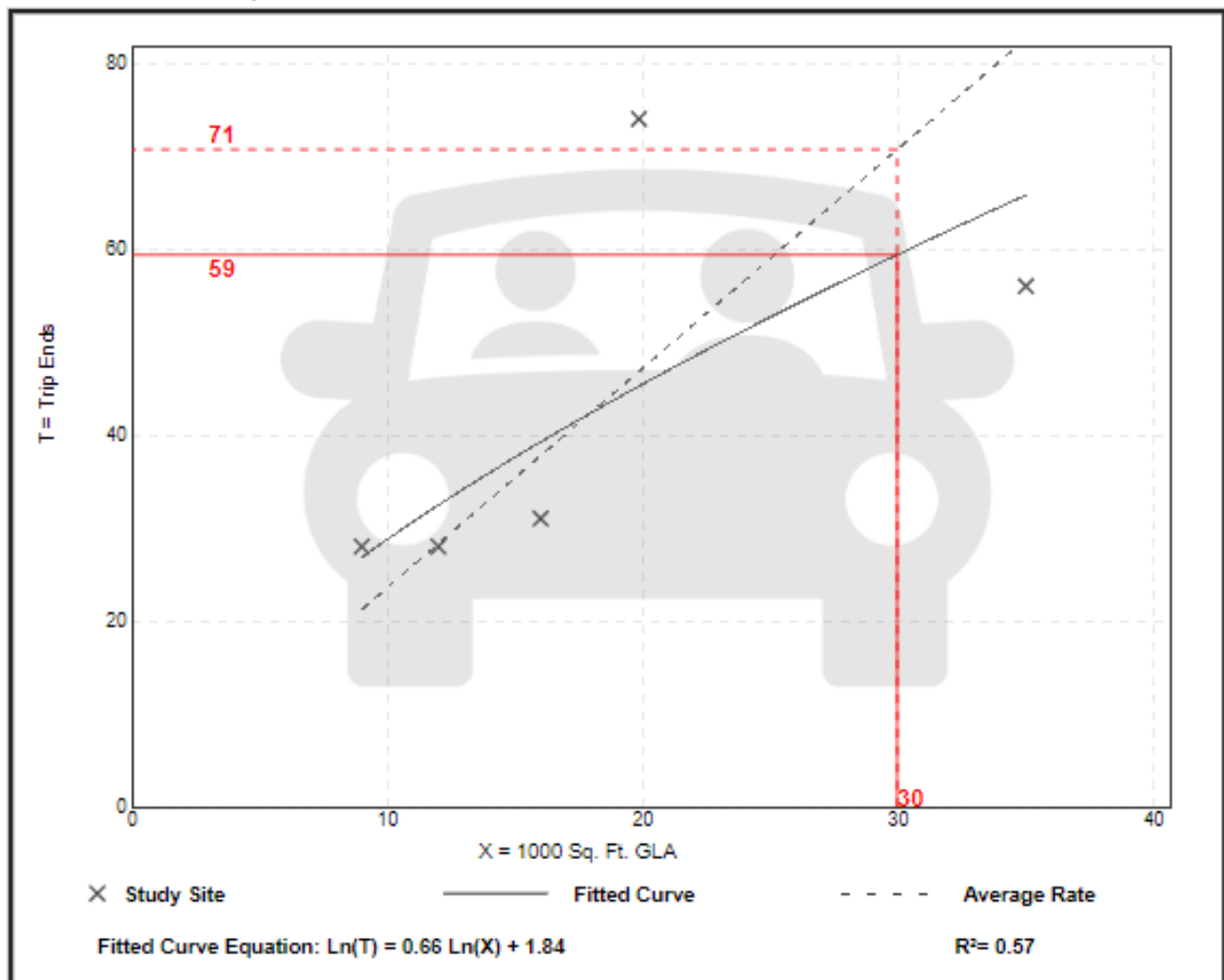
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 5
 Avg. 1000 Sq. Ft. GLA: 18
 Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation

Caution – Small Sample Size



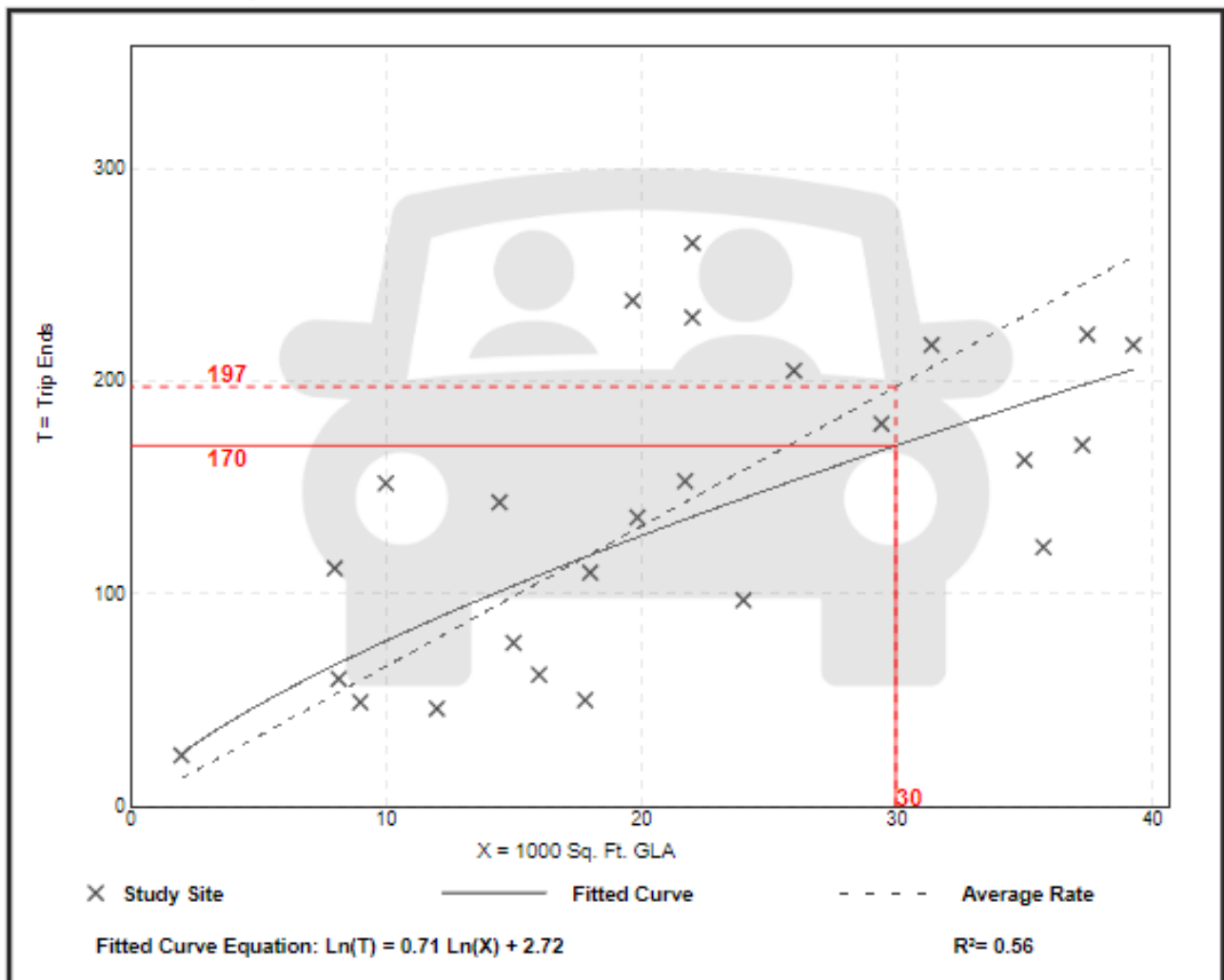
Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 25
 Avg. 1000 Sq. Ft. GLA: 21
 Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	100	0	0	87	0	1	0	11	8	0	8
Future Vol, veh/h	5	100	0	0	87	0	1	0	11	8	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	109	0	0	95	0	1	0	12	9	0	9

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	95	0	0	109
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1499	-	-	1481
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1499	-	-	1481
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	9	9.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	922	1499	-	-	1481	-	-	826
HCM Lane V/C Ratio	0.014	0.004	-	-	-	-	-	0.021
HCM Control Delay (s)	9	7.4	0	-	0	-	-	9.5
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	80	0	0	75	12	9	0	8	2	0	14
Future Vol, veh/h	12	80	0	0	75	12	9	0	8	2	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	87	0	0	82	13	10	0	9	2	0	15

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	95	0	0	87
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1499	-	-	1509
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1499	-	-	1509
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	9.4	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	828	1499	-	-	1509	-	-	933
HCM Lane V/C Ratio	0.022	0.009	-	-	-	-	-	0.019
HCM Control Delay (s)	9.4	7.4	0	-	0	-	-	8.9
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	39	0	0	102	2	5	0	5	2	0	7
Future Vol, veh/h	6	39	0	0	102	2	5	0	5	2	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	42	0	0	111	2	5	0	5	2	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	113	0	0	42
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1476	-	-	1567
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1476	-	-	1567
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	9.1	9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	889	1476	-	-	1567	-	-	901
HCM Lane V/C Ratio	0.012	0.004	-	-	-	-	-	0.011
HCM Control Delay (s)	9.1	7.5	0	-	0	-	-	9
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	106	3	20	87	0	2	0	5	8	0	8
Future Vol, veh/h	5	106	3	20	87	0	2	0	5	8	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	115	3	22	95	0	2	0	5	9	0	9

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	95	0	0	118
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1499	-	-	1470
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1499	-	-	1470
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.4	9.3	9.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	838	1499	-	-	1470	-	-	791
HCM Lane V/C Ratio	0.009	0.004	-	-	0.015	-	-	0.022
HCM Control Delay (s)	9.3	7.4	0	-	7.5	0	-	9.7
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	43	2	14	102	2	4	0	26	2	0	7
Future Vol, veh/h	6	43	2	14	102	2	4	0	26	2	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	47	2	15	111	2	4	0	28	2	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	113	0	0	49
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1476	-	-	1558
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1476	-	-	1558
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.9	8.8	9.2
HCM LOS			A	A

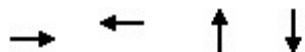
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	971	1476	-	-	1558	-	-	877
HCM Lane V/C Ratio	0.034	0.004	-	-	0.01	-	-	0.011
HCM Control Delay (s)	8.8	7.5	0	-	7.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

4: Rainbow & 50th St
 HCM 6th Signalized Intersection Summary

AM_Existing_SEP.syn
 09/09/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	41	8	66	4	8	8	45	503	7	5	437	33
Future Volume (veh/h)	41	8	66	4	8	8	45	503	7	5	437	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	45	9	72	4	9	9	49	547	8	5	475	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	12	96	6	14	14	151	1526	22	62	1580	119
Arrive On Green	0.10	0.10	0.10	0.02	0.02	0.02	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	596	119	954	314	707	707	173	3155	45	7	3268	245
Grp Volume(v), veh/h	126	0	0	22	0	0	305	0	299	273	0	243
Grp Sat Flow(s),veh/h/ln	1669	0	0	1727	0	0	1679	0	1694	1862	0	1658
Q Serve(g_s), s	4.6	0.0	0.0	0.8	0.0	0.0	0.0	0.0	6.9	0.0	0.0	5.5
Cycle Q Clear(g_c), s	4.6	0.0	0.0	0.8	0.0	0.0	6.2	0.0	6.9	5.5	0.0	5.5
Prop In Lane	0.36		0.57	0.18		0.41	0.16		0.03	0.02		0.15
Lane Grp Cap(c), veh/h	169	0	0	35	0	0	880	0	819	960	0	802
V/C Ratio(X)	0.75	0.00	0.00	0.63	0.00	0.00	0.35	0.00	0.37	0.28	0.00	0.30
Avail Cap(c_a), veh/h	538	0	0	557	0	0	880	0	819	960	0	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	0.0	30.2	0.0	0.0	9.9	0.0	10.0	9.7	0.0	9.7
Incr Delay (d2), s/veh	6.4	0.0	0.0	16.8	0.0	0.0	1.1	0.0	1.3	0.7	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.5	0.0	0.0	2.4	0.0	2.4	2.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	0.0	0.0	47.0	0.0	0.0	11.0	0.0	11.3	10.4	0.0	10.7
LnGrp LOS	C	A	A	D	A	A	B	A	B	B	A	B
Approach Vol, veh/h		126			22			604				516
Approach Delay, s/veh		33.5			47.0			11.1				10.5
Approach LOS		C			D			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.5		14.3		38.5		9.3				
Change Period (Y+Rc), s		8.5		8.0		8.5		8.0				
Max Green Setting (Gmax), s		30.0		20.0		30.0		20.0				
Max Q Clear Time (g_c+I1), s		8.9		6.6		7.5		2.8				
Green Ext Time (p_c), s		3.7		0.5		3.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				13.7								
HCM 6th LOS				B								



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	126	22	604	516
v/c Ratio	0.48	0.13	0.33	0.26
Control Delay	32.8	31.8	12.4	11.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	32.8	31.8	12.4	11.6
Queue Length 50th (ft)	40	7	55	44
Queue Length 95th (ft)	103	31	162	133
Internal Link Dist (ft)	236	436	184	566
Turn Bay Length (ft)				
Base Capacity (vph)	523	540	1805	1969
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.24	0.04	0.33	0.26
Intersection Summary				

4: Rainbow & 50th St
 HCM 6th Signalized Intersection Summary

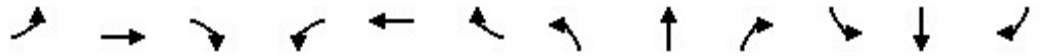


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	24	8	61	12	14	10	42	287	7	15	469	26
Future Volume (veh/h)	24	8	61	12	14	10	42	287	7	15	469	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	9	66	13	15	11	46	312	8	16	510	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	35	12	88	18	21	16	217	1392	36	79	1611	87
Arrive On Green	0.08	0.08	0.08	0.03	0.03	0.03	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	426	147	1081	584	674	494	294	2850	74	36	3300	178
Grp Volume(v), veh/h	101	0	0	39	0	0	182	0	184	291	0	263
Grp Sat Flow(s),veh/h/ln	1654	0	0	1752	0	0	1529	0	1689	1843	0	1670
Q Serve(g_s), s	3.7	0.0	0.0	1.4	0.0	0.0	0.0	0.0	3.8	0.0	0.0	5.9
Cycle Q Clear(g_c), s	3.7	0.0	0.0	1.4	0.0	0.0	5.9	0.0	3.8	5.8	0.0	5.9
Prop In Lane	0.26		0.65	0.33		0.28	0.25		0.04	0.05		0.11
Lane Grp Cap(c), veh/h	134	0	0	55	0	0	820	0	825	962	0	815
V/C Ratio(X)	0.75	0.00	0.00	0.70	0.00	0.00	0.22	0.00	0.22	0.30	0.00	0.32
Avail Cap(c_a), veh/h	539	0	0	570	0	0	820	0	825	962	0	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	0.0	29.5	0.0	0.0	8.9	0.0	9.0	9.5	0.0	9.5
Incr Delay (d2), s/veh	8.1	0.0	0.0	15.0	0.0	0.0	0.6	0.0	0.6	0.8	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	0.8	0.0	0.0	1.3	0.0	1.3	2.2	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	0.0	0.0	44.4	0.0	0.0	9.5	0.0	9.6	10.3	0.0	10.6
LnGrp LOS	D	A	A	D	A	A	A	A	A	B	A	B
Approach Vol, veh/h		101			39			366				554
Approach Delay, s/veh		35.8			44.4			9.6				10.5
Approach LOS		D			D			A				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.5		13.0		38.5		9.9				
Change Period (Y+Rc), s		8.5		8.0		8.5		8.0				
Max Green Setting (Gmax), s		30.0		20.0		30.0		20.0				
Max Q Clear Time (g_c+I1), s		7.9		5.7		7.9		3.4				
Green Ext Time (p_c), s		2.1		0.4		3.3		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				13.8								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary

4: Rainbow & 50th St

09/09/2023

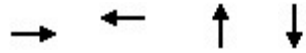


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	17	12	20	20	39	10	20	366	4	9	870	46
Future Volume (veh/h)	17	12	20	20	39	10	20	366	4	9	870	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	13	22	22	42	11	22	398	4	10	946	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	16	28	30	57	15	107	1624	16	66	1666	87
Arrive On Green	0.04	0.04	0.04	0.06	0.06	0.06	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	582	420	711	527	1006	263	82	3262	32	10	3346	176
Grp Volume(v), veh/h	53	0	0	75	0	0	215	0	209	531	0	475
Grp Sat Flow(s),veh/h/ln	1713	0	0	1797	0	0	1681	0	1696	1861	0	1670
Q Serve(g_s), s	1.8	0.0	0.0	2.5	0.0	0.0	0.0	0.0	4.3	0.0	0.0	12.0
Cycle Q Clear(g_c), s	1.8	0.0	0.0	2.5	0.0	0.0	3.9	0.0	4.3	12.0	0.0	12.0
Prop In Lane	0.34		0.42	0.29		0.15	0.10		0.02	0.02		0.11
Lane Grp Cap(c), veh/h	67	0	0	101	0	0	903	0	844	988	0	832
V/C Ratio(X)	0.79	0.00	0.00	0.74	0.00	0.00	0.24	0.00	0.25	0.54	0.00	0.57
Avail Cap(c_a), veh/h	569	0	0	596	0	0	903	0	844	988	0	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	0.0	28.0	0.0	0.0	8.6	0.0	8.7	10.6	0.0	10.6
Incr Delay (d2), s/veh	18.1	0.0	0.0	10.2	0.0	0.0	0.6	0.0	0.7	2.1	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	1.3	0.0	0.0	1.4	0.0	1.4	4.5	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	0.0	0.0	38.2	0.0	0.0	9.2	0.0	9.4	12.7	0.0	13.5
LnGrp LOS	D	A	A	D	A	A	A	A	A	B	A	B
Approach Vol, veh/h		53			75			424				1006
Approach Delay, s/veh		46.8			38.2			9.3				13.1
Approach LOS		D			D			A				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.5		10.4		38.5		11.4				
Change Period (Y+Rc), s		8.5		8.0		8.5		8.0				
Max Green Setting (Gmax), s		30.0		20.0		30.0		20.0				
Max Q Clear Time (g_c+I1), s		6.3		3.8		14.0		4.5				
Green Ext Time (p_c), s		2.6		0.2		5.8		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				14.4								
HCM 6th LOS				B								

Queues

4: Rainbow & 50th St

09/10/2023



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	53	75	424	1006
v/c Ratio	0.28	0.34	0.24	0.52
Control Delay	33.2	33.5	12.4	15.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	33.2	33.5	12.4	15.5
Queue Length 50th (ft)	22	30	61	180
Queue Length 95th (ft)	55	70	106	284
Internal Link Dist (ft)	236	436	184	566
Turn Bay Length (ft)				
Base Capacity (vph)	516	536	1771	1925
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.14	0.24	0.52

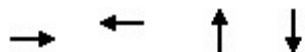
Intersection Summary

4: Rainbow & 50th St
 HCM 6th Signalized Intersection Summary

AM_Existing+Prop_SEP.syn
 09/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	41	9	66	10	11	8	46	519	8	5	482	50
Future Volume (veh/h)	41	9	66	10	11	8	46	519	8	5	482	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	45	10	72	11	12	9	50	564	9	5	524	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	13	96	16	18	13	148	1504	24	61	1523	155
Arrive On Green	0.10	0.10	0.10	0.03	0.03	0.03	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	592	132	947	602	657	493	169	3137	49	6	3176	324
Grp Volume(v), veh/h	127	0	0	32	0	0	313	0	310	309	0	274
Grp Sat Flow(s),veh/h/ln	1670	0	0	1752	0	0	1662	0	1693	1863	0	1644
Q Serve(g_s), s	4.6	0.0	0.0	1.1	0.0	0.0	0.0	0.0	7.3	0.0	0.0	6.5
Cycle Q Clear(g_c), s	4.6	0.0	0.0	1.1	0.0	0.0	6.5	0.0	7.3	6.5	0.0	6.5
Prop In Lane	0.35		0.57	0.34		0.28	0.16		0.03	0.02		0.20
Lane Grp Cap(c), veh/h	170	0	0	48	0	0	863	0	812	952	0	788
V/C Ratio(X)	0.75	0.00	0.00	0.67	0.00	0.00	0.36	0.00	0.38	0.32	0.00	0.35
Avail Cap(c_a), veh/h	534	0	0	560	0	0	863	0	812	952	0	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	0.0	30.2	0.0	0.0	10.2	0.0	10.4	10.2	0.0	10.2
Incr Delay (d2), s/veh	6.4	0.0	0.0	15.0	0.0	0.0	1.2	0.0	1.4	0.9	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	0.7	0.0	0.0	2.5	0.0	2.6	2.4	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	0.0	0.0	45.2	0.0	0.0	11.4	0.0	11.7	11.1	0.0	11.4
LnGrp LOS	C	A	A	D	A	A	B	A	B	B	A	B
Approach Vol, veh/h		127			32			623				583
Approach Delay, s/veh		33.7			45.2			11.6				11.2
Approach LOS		C			D			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.5		14.4		38.5		9.7				
Change Period (Y+Rc), s		8.5		8.0		8.5		8.0				
Max Green Setting (Gmax), s		30.0		20.0		30.0		20.0				
Max Q Clear Time (g_c+I1), s		9.3		6.6		8.5		3.1				
Green Ext Time (p_c), s		3.8		0.5		3.4		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				14.3								
HCM 6th LOS				B								



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	127	32	623	583
v/c Ratio	0.48	0.17	0.35	0.30
Control Delay	32.9	32.0	12.8	12.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	32.9	32.0	12.8	12.2
Queue Length 50th (ft)	40	10	57	52
Queue Length 95th (ft)	105	40	172	154
Internal Link Dist (ft)	236	436	184	566
Turn Bay Length (ft)				
Base Capacity (vph)	525	547	1772	1948
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.24	0.06	0.35	0.30
Intersection Summary				

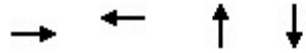
HCM 6th Signalized Intersection Summary
 4: Rainbow & 50th St

PM_Existing+Prop_SEP.syn
 09/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	36	16	22	24	41	10	26	445	10	9	902	58
Future Volume (veh/h)	36	16	22	24	41	10	26	445	10	9	902	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	17	24	26	45	11	28	484	11	10	980	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	52	23	32	35	61	15	105	1539	34	64	1594	102
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.06	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	846	369	520	570	987	241	86	3190	71	10	3304	211
Grp Volume(v), veh/h	80	0	0	82	0	0	263	0	260	556	0	497
Grp Sat Flow(s),veh/h/ln	1734	0	0	1798	0	0	1658	0	1689	1860	0	1664
Q Serve(g_s), s	2.8	0.0	0.0	2.8	0.0	0.0	0.0	0.0	5.9	0.0	0.0	13.7
Cycle Q Clear(g_c), s	2.8	0.0	0.0	2.8	0.0	0.0	13.7	0.0	5.9	13.6	0.0	13.7
Prop In Lane	0.49		0.30	0.32		0.13	0.11		0.04	0.02		0.13
Lane Grp Cap(c), veh/h	107	0	0	111	0	0	864	0	815	956	0	803
V/C Ratio(X)	0.75	0.00	0.00	0.74	0.00	0.00	0.30	0.00	0.32	0.58	0.00	0.62
Avail Cap(c_a), veh/h	558	0	0	578	0	0	864	0	815	956	0	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	0.0	28.7	0.0	0.0	9.7	0.0	9.8	11.9	0.0	11.9
Incr Delay (d2), s/veh	10.0	0.0	0.0	9.1	0.0	0.0	0.9	0.0	1.0	2.6	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	1.4	0.0	0.0	2.0	0.0	2.0	5.3	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	0.0	0.0	37.7	0.0	0.0	10.6	0.0	10.9	14.4	0.0	15.4
LnGrp LOS	D	A	A	D	A	A	B	A	B	B	A	B
Approach Vol, veh/h		80			82			523				1053
Approach Delay, s/veh		38.7			37.7			10.7				14.9
Approach LOS		D			D			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.5		11.8		38.5		11.9				
Change Period (Y+Rc), s		8.5		8.0		8.5		8.0				
Max Green Setting (Gmax), s		30.0		20.0		30.0		20.0				
Max Q Clear Time (g_c+I1), s		15.7		4.8		15.7		4.8				
Green Ext Time (p_c), s		2.8		0.3		5.8		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				15.8								
HCM 6th LOS				B								

Queues
4: Rainbow & 50th St



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	80	82	523	1053
v/c Ratio	0.37	0.37	0.33	0.60
Control Delay	34.8	34.7	15.2	19.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	34.8	34.7	15.2	19.1
Queue Length 50th (ft)	33	34	83	201
Queue Length 95th (ft)	75	76	142	#323
Internal Link Dist (ft)	236	436	184	566
Turn Bay Length (ft)				
Base Capacity (vph)	509	526	1580	1756
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.16	0.16	0.33	0.60

Intersection Summary

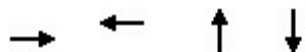
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Rainbow & 50th St
 HCM 6th Signalized Intersection Summary

AM_Future 2043_SEP.syn
 09/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	41	9	66	10	11	8	46	571	8	5	530	50
Future Volume (veh/h)	41	9	66	10	11	8	46	571	8	5	530	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	45	10	72	11	12	9	50	621	9	5	576	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	13	96	16	18	13	137	1520	22	61	1538	143
Arrive On Green	0.10	0.10	0.10	0.03	0.03	0.03	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	592	132	947	602	657	493	148	3171	45	6	3207	298
Grp Volume(v), veh/h	127	0	0	32	0	0	341	0	339	337	0	298
Grp Sat Flow(s),veh/h/ln	1670	0	0	1752	0	0	1670	0	1694	1863	0	1648
Q Serve(g_s), s	4.6	0.0	0.0	1.1	0.0	0.0	0.0	0.0	8.1	0.0	0.0	7.2
Cycle Q Clear(g_c), s	4.6	0.0	0.0	1.1	0.0	0.0	7.3	0.0	8.1	7.1	0.0	7.2
Prop In Lane	0.35		0.57	0.34		0.28	0.15		0.03	0.01		0.18
Lane Grp Cap(c), veh/h	170	0	0	48	0	0	867	0	812	951	0	790
V/C Ratio(X)	0.75	0.00	0.00	0.67	0.00	0.00	0.39	0.00	0.42	0.35	0.00	0.38
Avail Cap(c_a), veh/h	534	0	0	560	0	0	867	0	812	951	0	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	0.0	30.2	0.0	0.0	10.4	0.0	10.6	10.3	0.0	10.4
Incr Delay (d2), s/veh	6.4	0.0	0.0	15.0	0.0	0.0	1.3	0.0	1.6	1.0	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	0.7	0.0	0.0	2.8	0.0	2.9	2.7	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	0.0	0.0	45.2	0.0	0.0	11.7	0.0	12.2	11.4	0.0	11.7
LnGrp LOS	C	A	A	D	A	A	B	A	B	B	A	B
Approach Vol, veh/h		127			32			680				635
Approach Delay, s/veh		33.7			45.2			11.9				11.5
Approach LOS		C			D			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.5		14.4		38.5		9.7				
Change Period (Y+Rc), s		8.5		8.0		8.5		8.0				
Max Green Setting (Gmax), s		30.0		20.0		30.0		20.0				
Max Q Clear Time (g_c+I1), s		10.1		6.6		9.2		3.1				
Green Ext Time (p_c), s		4.2		0.5		3.8		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				14.4								
HCM 6th LOS				B								



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	127	32	684	648
v/c Ratio	0.48	0.17	0.39	0.33
Control Delay	32.9	32.0	13.2	12.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	32.9	32.0	13.2	12.4
Queue Length 50th (ft)	40	10	65	59
Queue Length 95th (ft)	105	40	192	174
Internal Link Dist (ft)	236	436	184	566
Turn Bay Length (ft)				
Base Capacity (vph)	525	547	1766	1950
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.24	0.06	0.39	0.33
Intersection Summary				

HCM 6th Signalized Intersection Summary
 4: Rainbow & 50th St

PM_Future 2043_SEP.syn
 09/12/2023

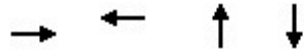


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	36	16	22	24	41	10	26	490	10	9	992	58
Future Volume (veh/h)	36	16	22	24	41	10	26	490	10	9	992	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	17	24	26	45	11	28	533	11	10	1078	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	52	23	32	35	61	15	97	1528	31	63	1604	93
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.06	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	846	369	520	570	987	241	69	3167	65	9	3326	193
Grp Volume(v), veh/h	80	0	0	82	0	0	286	0	286	607	0	544
Grp Sat Flow(s),veh/h/ln	1734	0	0	1798	0	0	1611	0	1690	1860	0	1667
Q Serve(g_s), s	2.8	0.0	0.0	2.8	0.0	0.0	0.3	0.0	6.5	0.0	0.0	15.6
Cycle Q Clear(g_c), s	2.8	0.0	0.0	2.8	0.0	0.0	15.8	0.0	6.5	15.5	0.0	15.6
Prop In Lane	0.49		0.30	0.32		0.13	0.10		0.04	0.02		0.12
Lane Grp Cap(c), veh/h	107	0	0	111	0	0	841	0	815	956	0	804
V/C Ratio(X)	0.75	0.00	0.00	0.74	0.00	0.00	0.34	0.00	0.35	0.63	0.00	0.68
Avail Cap(c_a), veh/h	558	0	0	578	0	0	841	0	815	956	0	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	0.0	28.7	0.0	0.0	9.8	0.0	10.0	12.3	0.0	12.4
Incr Delay (d2), s/veh	10.0	0.0	0.0	9.1	0.0	0.0	1.1	0.0	1.2	3.2	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	1.4	0.0	0.0	2.2	0.0	2.3	6.1	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	0.0	0.0	37.7	0.0	0.0	10.9	0.0	11.2	15.5	0.0	16.9
LnGrp LOS	D	A	A	D	A	A	B	A	B	B	A	B
Approach Vol, veh/h		80			82			572				1151
Approach Delay, s/veh		38.7			37.7			11.1				16.2
Approach LOS		D			D			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.5		11.8		38.5		11.9				
Change Period (Y+Rc), s		8.5		8.0		8.5		8.0				
Max Green Setting (Gmax), s		30.0		20.0		30.0		20.0				
Max Q Clear Time (g_c+I1), s		17.8		4.8		17.6		4.8				
Green Ext Time (p_c), s		2.8		0.3		5.9		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				16.5								
HCM 6th LOS				B								

Queues

4: Rainbow & 50th St


09/10/2023



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	80	82	588	1161
v/c Ratio	0.37	0.37	0.38	0.66
Control Delay	34.8	34.7	15.7	20.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	34.8	34.7	15.7	20.8
Queue Length 50th (ft)	33	34	95	232
Queue Length 95th (ft)	75	76	163	#410
Internal Link Dist (ft)	236	436	184	566
Turn Bay Length (ft)				
Base Capacity (vph)	509	526	1559	1757
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.16	0.16	0.38	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	11	0	12	0	540	12	5	497	0
Future Vol, veh/h	0	0	0	11	0	12	0	540	12	5	497	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	12	0	13	0	587	13	5	540	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	844	-	270	874	1144	300	540	0	0	600	0	0
Stage 1	550	-	-	594	594	-	-	-	-	-	-	-
Stage 2	294	-	-	280	550	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	256	0	728	244	198	696	1025	-	-	973	-	-
Stage 1	487	0	-	458	491	-	-	-	-	-	-	-
Stage 2	690	0	-	703	514	-	-	-	-	-	-	-
Platoon blocked, %	-											
Mov Cap-1 Maneuver	250	-	728	243	197	696	1025	-	-	973	-	-
Mov Cap-2 Maneuver	250	-	-	243	197	-	-	-	-	-	-	-
Stage 1	487	-	-	458	491	-	-	-	-	-	-	-
Stage 2	677	-	-	698	510	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		15.5		0		0.1	
HCM LOS	A		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1025	-	-	-	-	368	973	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.068	0.006	-	-
HCM Control Delay (s)	0	-	-	0	0	15.5	8.7	0	-
HCM Lane LOS	A	-	-	A	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.2	0	-	-

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	21	0	13	0	328	8	4	536	0
Future Vol, veh/h	0	0	0	21	0	13	0	328	8	4	536	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	23	0	14	0	357	9	4	583	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	770	-	292	662	953	183	583	0	0	366	0	0
Stage 1	591	-	-	362	362	-	-	-	-	-	-	-
Stage 2	179	-	-	300	591	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	290	0	704	347	258	828	987	-	-	1189	-	-
Stage 1	460	0	-	629	624	-	-	-	-	-	-	-
Stage 2	805	0	-	684	493	-	-	-	-	-	-	-
Platoon blocked, %	-											
Mov Cap-1 Maneuver	284	-	704	346	257	828	987	-	-	1189	-	-
Mov Cap-2 Maneuver	284	-	-	346	257	-	-	-	-	-	-	-
Stage 1	460	-	-	629	624	-	-	-	-	-	-	-
Stage 2	791	-	-	681	491	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		13.8		0		0.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	987	-	-	-	-	445	1189	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.083	0.004	-	-
HCM Control Delay (s)	0	-	-	0	0	13.8	8	0	-
HCM Lane LOS	A	-	-	A	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.3	0	-	-

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	27	0	27	0	370	8	5	908	0
Future Vol, veh/h	0	0	0	27	0	27	0	370	8	5	908	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	29	0	29	0	402	9	5	987	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1198	-	494	911	1404	206	987	0	0	411	0	0
Stage 1	997	-	-	407	407	-	-	-	-	-	-	-
Stage 2	201	-	-	504	997	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	141	0	521	229	138	800	696	-	-	1144	-	-
Stage 1	262	0	-	592	596	-	-	-	-	-	-	-
Stage 2	782	0	-	518	320	-	-	-	-	-	-	-
Platoon blocked, %	-											
Mov Cap-1 Maneuver	135	-	521	227	137	800	696	-	-	1144	-	-
Mov Cap-2 Maneuver	135	-	-	227	137	-	-	-	-	-	-	-
Stage 1	262	-	-	592	596	-	-	-	-	-	-	-
Stage 2	753	-	-	513	317	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		17.2		0		0	
HCM LOS	A		C					


Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	696	-	-	-	-	354	1144	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.166	0.005	-	-
HCM Control Delay (s)	0	-	-	0	0	17.2	8.2	0	-
HCM Lane LOS	A	-	-	A	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.6	0	-	-

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	7	11	0	12	25	544	12	5	497	57
Future Vol, veh/h	10	0	7	11	0	12	25	544	12	5	497	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	8	12	0	13	27	591	13	5	540	62

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	931	-	301	932	1264	302	602	0	0	604	0	0
Stage 1	581	-	-	652	652	-	-	-	-	-	-	-
Stage 2	350	-	-	280	612	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	222	0	695	221	168	694	971	-	-	970	-	-
Stage 1	467	0	-	423	462	-	-	-	-	-	-	-
Stage 2	639	0	-	703	482	-	-	-	-	-	-	-
Platoon blocked, %	-											
Mov Cap-1 Maneuver	210	-	695	210	160	694	971	-	-	970	-	-
Mov Cap-2 Maneuver	210	-	-	210	160	-	-	-	-	-	-	-
Stage 1	447	-	-	405	443	-	-	-	-	-	-	-
Stage 2	601	-	-	690	478	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.8		16.8		0.6		0.1	
HCM LOS	C		C					


Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	971	-	-	210	695	330	970	-	-
HCM Lane V/C Ratio	0.028	-	-	0.052	0.011	0.076	0.006	-	-
HCM Control Delay (s)	8.8	0.2	-	23.1	10.2	16.8	8.7	0	-
HCM Lane LOS	A	A	-	C	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0.2	0	-	-

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	0	30	27	0	27	18	389	8	5	908	40
Future Vol, veh/h	45	0	30	27	0	27	18	389	8	5	908	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	0	33	29	0	29	20	423	9	5	987	43

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1271	-	515	972	1508	216	1030	0	0	432	0	0
Stage 1	1019	-	-	468	468	-	-	-	-	-	-	-
Stage 2	252	-	-	504	1040	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	125	0	505	207	120	789	670	-	-	1124	-	-
Stage 1	254	0	-	545	560	-	-	-	-	-	-	-
Stage 2	730	0	-	518	306	-	-	-	-	-	-	-
Platoon blocked, %	-											
Mov Cap-1 Maneuver	116	-	505	186	114	789	670	-	-	1124	-	-
Mov Cap-2 Maneuver	116	-	-	186	114	-	-	-	-	-	-	-
Stage 1	244	-	-	524	538	-	-	-	-	-	-	-
Stage 2	675	-	-	479	303	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	39.2		19.8		0.6		0	
HCM LOS	E		C					


Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	670	-	-	116	505	301	1124	-	-
HCM Lane V/C Ratio	0.029	-	-	0.422	0.065	0.195	0.005	-	-
HCM Control Delay (s)	10.5	0.2	-	57	12.6	19.8	8.2	0	-
HCM Lane LOS	B	A	-	F	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.8	0.2	0.7	0	-	-

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	7	11	0	12	25	599	12	5	547	57
Future Vol, veh/h	10	0	7	11	0	12	25	599	12	5	547	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	8	12	0	13	27	651	13	5	595	62

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1016	-	329	1020	1379	332	657	0	0	664	0	0
Stage 1	636	-	-	712	712	-	-	-	-	-	-	-
Stage 2	380	-	-	308	667	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	192	0	667	191	143	664	926	-	-	921	-	-
Stage 1	433	0	-	389	434	-	-	-	-	-	-	-
Stage 2	614	0	-	677	455	-	-	-	-	-	-	-
Platoon blocked, %	-											
Mov Cap-1 Maneuver	180	-	667	181	135	664	926	-	-	921	-	-
Mov Cap-2 Maneuver	180	-	-	181	135	-	-	-	-	-	-	-
Stage 1	413	-	-	371	414	-	-	-	-	-	-	-
Stage 2	574	-	-	663	451	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.8		18.5		0.5		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	926	-	-	180	667	292	921	-	-
HCM Lane V/C Ratio	0.029	-	-	0.06	0.011	0.086	0.006	-	-
HCM Control Delay (s)	9	0.2	-	26.3	10.5	18.5	8.9	0	-
HCM Lane LOS	A	A	-	D	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0.3	0	-	-

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	0	30	27	0	27	18	428	8	5	999	40
Future Vol, veh/h	45	0	30	27	0	27	18	428	8	5	999	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	0	33	29	0	29	20	465	9	5	1086	43

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1391	-	565	1063	1649	237	1129	0	0	474	0	0
Stage 1	1118	-	-	510	510	-	-	-	-	-	-	-
Stage 2	273	-	-	553	1139	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	102	0	468	177	98	764	615	-	-	1084	-	-
Stage 1	221	0	-	514	536	-	-	-	-	-	-	-
Stage 2	710	0	-	485	274	-	-	-	-	-	-	-
Platoon blocked, %	-											
Mov Cap-1 Maneuver	94	-	468	158	93	764	615	-	-	1084	-	-
Mov Cap-2 Maneuver	94	-	-	158	93	-	-	-	-	-	-	-
Stage 1	211	-	-	491	512	-	-	-	-	-	-	-
Stage 2	653	-	-	445	270	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	52.7		22.7		0.6		0.1	
HCM LOS	F		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	615	-	-	94	468	262	1084	-	-
HCM Lane V/C Ratio	0.032	-	-	0.52	0.07	0.224	0.005	-	-
HCM Control Delay (s)	11	0.2	-	79	13.3	22.7	8.3	0.1	-
HCM Lane LOS	B	A	-	F	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.3	0.2	0.8	0	-	-

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	6	0	0	0	5	555	0	2	501	7
Future Vol, veh/h	6	0	6	0	0	0	5	555	0	2	501	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	7	0	0	0	5	603	0	2	545	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	865	1166	277	890	1170	302	553	0	0	603	0	0
Stage 1	553	553	-	613	613	-	-	-	-	-	-	-
Stage 2	312	613	-	277	557	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	248	193	720	237	192	694	1013	-	-	971	-	-
Stage 1	485	513	-	446	481	-	-	-	-	-	-	-
Stage 2	673	481	-	706	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	246	191	720	233	190	694	1013	-	-	971	-	-
Mov Cap-2 Maneuver	246	191	-	233	190	-	-	-	-	-	-	-
Stage 1	482	511	-	443	478	-	-	-	-	-	-	-
Stage 2	668	478	-	698	508	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.2		0		0.1		0	
HCM LOS	C		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1013	-	-	367	-	971	-
HCM Lane V/C Ratio	0.005	-	-	0.036	-	0.002	-
HCM Control Delay (s)	8.6	0	-	15.2	0	8.7	0
HCM Lane LOS	A	A	-	C	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	3	0	0	0	2	331	0	0	538	11
Future Vol, veh/h	2	0	3	0	0	0	2	331	0	0	538	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	3	0	0	0	2	360	0	0	585	12

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	775	955	299	657	961	180	597	0	0	360	0	0
Stage 1	591	591	-	364	364	-	-	-	-	-	-	-
Stage 2	184	364	-	293	597	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	288	257	697	350	255	832	976	-	-	1195	-	-
Stage 1	460	493	-	627	622	-	-	-	-	-	-	-
Stage 2	800	622	-	691	490	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	287	256	697	348	254	832	976	-	-	1195	-	-
Mov Cap-2 Maneuver	287	256	-	348	254	-	-	-	-	-	-	-
Stage 1	459	493	-	625	620	-	-	-	-	-	-	-
Stage 2	798	620	-	688	490	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	0	0.1	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	976	-	-	444	-	1195	-	-
HCM Lane V/C Ratio	0.002	-	-	0.012	-	-	-	-
HCM Control Delay (s)	8.7	0	-	13.2	0	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

HCM 6th TWSC
7: Rainbow & 51st

09/09/2023

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	2	0	0	0	1	373	0	8	890	8
Future Vol, veh/h	3	0	2	0	0	0	1	373	0	8	890	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	2	0	0	0	1	405	0	9	967	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1195	1397	488	909	1401	203	976	0	0	405	0	0
Stage 1	990	990	-	407	407	-	-	-	-	-	-	-
Stage 2	205	407	-	502	994	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	142	140	526	230	139	804	703	-	-	1150	-	-
Stage 1	264	323	-	592	596	-	-	-	-	-	-	-
Stage 2	778	596	-	520	321	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	140	137	526	226	136	804	703	-	-	1150	-	-
Mov Cap-2 Maneuver	140	137	-	226	136	-	-	-	-	-	-	-
Stage 1	263	318	-	591	595	-	-	-	-	-	-	-
Stage 2	776	595	-	509	316	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.7	0	0	0.2
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	703	-	-	198	-	1150	-	-
HCM Lane V/C Ratio	0.002	-	-	0.027	-	0.008	-	-
HCM Control Delay (s)	10.1	0	-	23.7	0	8.2	0.1	-
HCM Lane LOS	B	A	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	15	0	0	0	39	580	0	2	508	7
Future Vol, veh/h	10	0	15	0	0	0	39	580	0	2	508	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	16	0	0	0	42	630	0	2	552	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	959	1274	280	994	1278	315	560	0	0	630	0	0
Stage 1	560	560	-	714	714	-	-	-	-	-	-	-
Stage 2	399	714	-	280	564	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	211	166	717	199	165	681	1007	-	-	948	-	-
Stage 1	480	509	-	388	433	-	-	-	-	-	-	-
Stage 2	598	433	-	703	507	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	200	155	717	184	154	681	1007	-	-	948	-	-
Mov Cap-2 Maneuver	200	155	-	184	154	-	-	-	-	-	-	-
Stage 1	449	507	-	363	405	-	-	-	-	-	-	-
Stage 2	560	405	-	685	505	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	0	0.7	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1007	-	-	353	-	948	-
HCM Lane V/C Ratio	0.042	-	-	0.077	-	0.002	-
HCM Control Delay (s)	8.7	0.2	-	16	0	8.8	0
HCM Lane LOS	A	A	-	C	A	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-	0	-

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	27	0	49	0	0	0	27	391	0	8	920	8
Future Vol, veh/h	27	0	49	0	0	0	27	391	0	8	920	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	0	53	0	0	0	29	425	0	9	1000	9

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1294	1506	505	1001	1510	213	1009	0	0	425	0	0
Stage 1	1023	1023	-	483	483	-	-	-	-	-	-	-
Stage 2	271	483	-	518	1027	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	120	120	512	197	119	792	683	-	-	1131	-	-
Stage 1	252	311	-	534	551	-	-	-	-	-	-	-
Stage 2	712	551	-	509	310	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	113	111	512	167	110	792	683	-	-	1131	-	-
Mov Cap-2 Maneuver	113	111	-	167	110	-	-	-	-	-	-	-
Stage 1	238	305	-	504	520	-	-	-	-	-	-	-
Stage 2	672	520	-	448	304	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.7	0	1	0.2
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	683	-	-	227	-	1131	-
HCM Lane V/C Ratio	0.043	-	-	0.364	-	0.008	-
HCM Control Delay (s)	10.5	0.3	-	29.7	0	8.2	0.1
HCM Lane LOS	B	A	-	D	A	A	A
HCM 95th %tile Q(veh)	0.1	-	-	1.6	-	0	-

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	15	0	0	0	39	638	0	2	559	7
Future Vol, veh/h	10	0	15	0	0	0	39	638	0	2	559	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	16	0	0	0	42	693	0	2	608	8

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1047	1393	308	1085	1397	347	616	0	0	693	0	0
Stage 1	616	616	-	777	777	-	-	-	-	-	-	-
Stage 2	431	777	-	308	620	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	182	141	688	171	140	649	960	-	-	898	-	-
Stage 1	445	480	-	356	405	-	-	-	-	-	-	-
Stage 2	573	405	-	677	478	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	172	131	688	157	130	649	960	-	-	898	-	-
Mov Cap-2 Maneuver	172	131	-	157	130	-	-	-	-	-	-	-
Stage 1	413	479	-	331	376	-	-	-	-	-	-	-
Stage 2	532	376	-	659	477	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	17.6		0			0.8			0		
HCM LOS	C		A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	960	-	-	313	-	898	-	-
HCM Lane V/C Ratio	0.044	-	-	0.087	-	0.002	-	-
HCM Control Delay (s)	8.9	0.3	-	17.6	0	9	0	-
HCM Lane LOS	A	A	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	-	0	-	-

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	27	0	49	0	0	0	27	430	0	8	1012	8
Future Vol, veh/h	27	0	49	0	0	0	27	430	0	8	1012	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	0	53	0	0	0	29	467	0	9	1100	9

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1415	1648	555	1093	1652	234	1109	0	0	467	0	0
Stage 1	1123	1123	-	525	525	-	-	-	-	-	-	-
Stage 2	292	525	-	568	1127	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	97	98	475	169	98	768	625	-	-	1091	-	-
Stage 1	219	279	-	504	528	-	-	-	-	-	-	-
Stage 2	692	528	-	475	278	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	91	90	475	140	90	768	625	-	-	1091	-	-
Mov Cap-2 Maneuver	91	90	-	140	90	-	-	-	-	-	-	-
Stage 1	205	273	-	472	495	-	-	-	-	-	-	-
Stage 2	648	495	-	412	272	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	37.8		0		0.9		0.2	
HCM LOS	E		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	625	-	-	190	-	1091	-	-
HCM Lane V/C Ratio	0.047	-	-	0.435	-	0.008	-	-
HCM Control Delay (s)	11	0.3	-	37.8	0	8.3	0.1	-
HCM Lane LOS	B	A	-	E	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2	-	0	-	-

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	5	17	26	20	8	1
Future Vol, veh/h	5	17	26	20	8	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	18	28	22	9	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	50	0	-	0	67 39
Stage 1	-	-	-	-	39 -
Stage 2	-	-	-	-	28 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1557	-	-	-	938 1033
Stage 1	-	-	-	-	983 -
Stage 2	-	-	-	-	995 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1557	-	-	-	935 1033
Mov Cap-2 Maneuver	-	-	-	-	935 -
Stage 1	-	-	-	-	980 -
Stage 2	-	-	-	-	995 -

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1557	-	-	-	945
HCM Lane V/C Ratio	0.003	-	-	-	0.01
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	4	27	9	14	49	7
Future Vol, veh/h	4	27	9	14	49	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	29	10	15	53	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	25	0	-	0	55 18
Stage 1	-	-	-	-	18 -
Stage 2	-	-	-	-	37 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1589	-	-	-	953 1061
Stage 1	-	-	-	-	1005 -
Stage 2	-	-	-	-	985 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1589	-	-	-	950 1061
Mov Cap-2 Maneuver	-	-	-	-	950 -
Stage 1	-	-	-	-	1002 -
Stage 2	-	-	-	-	985 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1589	-	-	-	963
HCM Lane V/C Ratio	0.003	-	-	-	0.063
HCM Control Delay (s)	7.3	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	10	9	3	1	1
Future Vol, veh/h	0	10	9	3	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	10	3	1	1
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	13	0	-	0	23	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	11	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1606	-	-	-	993	1069
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1606	-	-	-	993	1069
Mov Cap-2 Maneuver	-	-	-	-	993	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1012	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1606	-	-	-	1030	
HCM Lane V/C Ratio	-	-	-	-	0.002	
HCM Control Delay (s)	0	-	-	-	8.5	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	6	9	0	0	0
Future Vol, veh/h	0	6	9	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	10	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	10	0	-	0	17 10
Stage 1	-	-	-	-	10 -
Stage 2	-	-	-	-	7 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1610	-	-	-	1001 1071
Stage 1	-	-	-	-	1013 -
Stage 2	-	-	-	-	1016 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1610	-	-	-	1001 1071
Mov Cap-2 Maneuver	-	-	-	-	1001 -
Stage 1	-	-	-	-	1013 -
Stage 2	-	-	-	-	1016 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1610	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	3	17	10	17	5	1
Future Vol, veh/h	3	17	10	17	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	18	11	18	5	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	29	0	-	0	44
Stage 1	-	-	-	-	20
Stage 2	-	-	-	-	24
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1584	-	-	-	967
Stage 1	-	-	-	-	1003
Stage 2	-	-	-	-	999
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1584	-	-	-	965
Mov Cap-2 Maneuver	-	-	-	-	965
Stage 1	-	-	-	-	1001
Stage 2	-	-	-	-	999

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1584	-	-	-	979
HCM Lane V/C Ratio	0.002	-	-	-	0.007
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	2	10	16	12	22	4
Future Vol, veh/h	2	10	16	12	22	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	11	17	13	24	4

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	30	0	-	0	39 24
Stage 1	-	-	-	-	24 -
Stage 2	-	-	-	-	15 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1583	-	-	-	973 1052
Stage 1	-	-	-	-	999 -
Stage 2	-	-	-	-	1008 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1583	-	-	-	972 1052
Mov Cap-2 Maneuver	-	-	-	-	972 -
Stage 1	-	-	-	-	998 -
Stage 2	-	-	-	-	1008 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1583	-	-	-	984
HCM Lane V/C Ratio	0.001	-	-	-	0.029
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1